

STOCKADE

WALL CONSTRUCTION



THE STOCKADE CORPORATION

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FOREWORD

Stockade is a fibrous building material with high insulating qualities which opens up entirely new building fields.

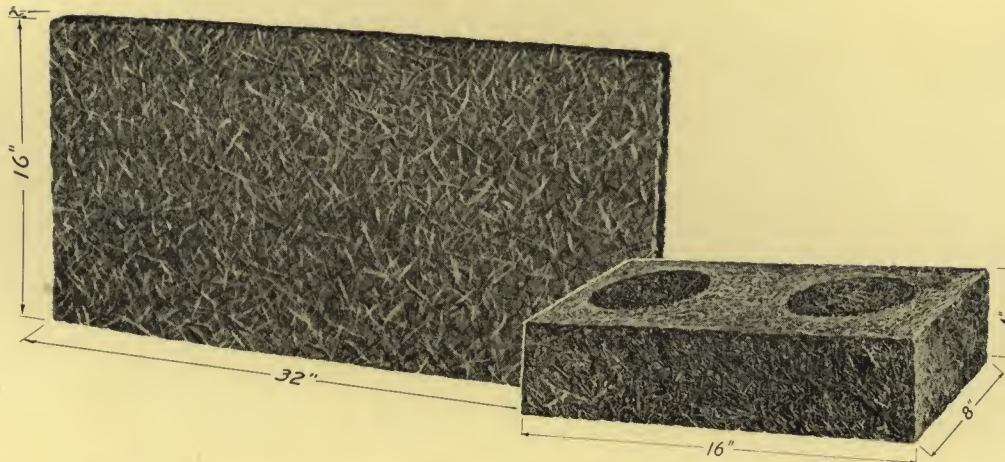
It is composed of long, tough, wood fibres, fire-proofed and held together by a permanent mineral cement. Stockade will not carry moisture, it is vermin proof and becomes more permanent with the years.

Any plastic material will adhere to the surface of Stockade. Although never used as a load bearing unit, Stockade is remarkably strong. For example, it has four times the strength of cork board in cross breaking strength and three times the crushing strength.

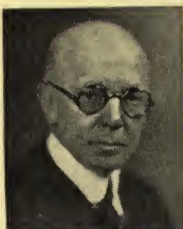
While Stockade has a multitude of applications in the construction field, such as the building of partitions, acoustical correction, floor construction, roof insulation, etc., this booklet is devoted entirely to the construction of exterior walls.

STOCKADE

WALL CONSTRUCTION



A permanent wall construction high in insulation, resistive to fire, vermin and moisture proof, with the strength of reinforced concrete at a minimum cost.



James Monroe Hewlett

For building residence walls of Stockade an excellent system was developed by James Monroe Hewlett, a director of the American Institute of Architects. The insulating qualities of Stockade are utilized in connection with the strength of reinforced concrete, giving the highest type of permanent construction at a minimum of cost.

In the illustrations above, two different Stockade units are shown. Both are used as molds for concrete, but they are different from the ordinary wood form in that they stay in place after the concrete has hardened to provide insulation and at the same time to save in labor for form removal.

The Stockade mold (with the two holes) is in size the equivalent of eight bricks, yet weighs only as much as one brick. The Stockade slab is used instead of a wood form for casting the concrete in the form of girths, beams or lintels.

Stockade walls are built up brick-fashion, only much faster because of the large size, light weight and self-bonding features of the Stockade molds.

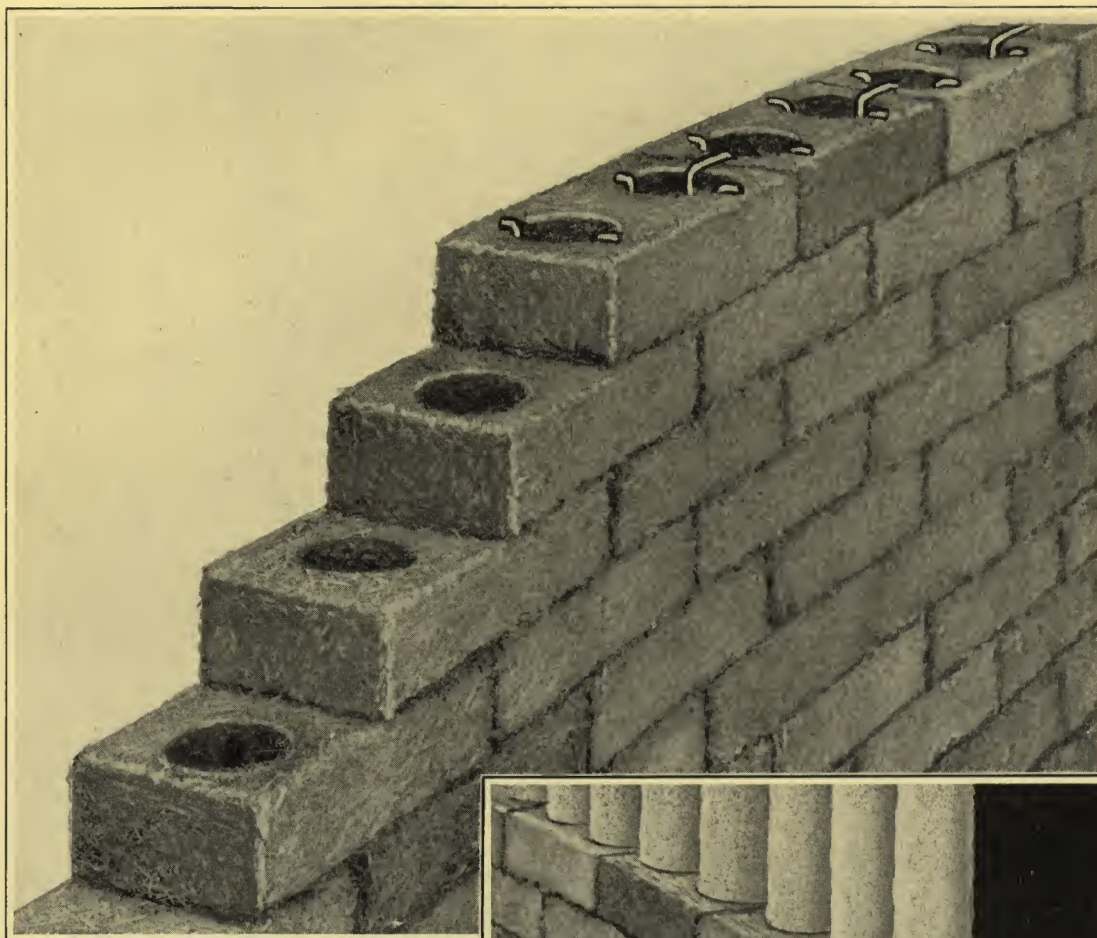
There are no mortar joints and no cracks to be penetrated by heat or moisture.

When built up, the molds form "columns of holes" which run up through the walls. As the wall progresses, these holes are filled with concrete, properly and simply reinforced.

Without further preparation, the wall is then ready for any exterior or interior treatment. Stucco bonds perfectly with the outside walls and plaster with the inside walls, without the use of lath or furring strips. And because Stockade is sufficiently resilient to take up any expansion or contraction, cracks are virtually unknown.

Because of the eight inch wall of Stockade construction, unusual architectural effects are possible. The enhancing beauty of deep reveals being easily obtained on the inside or outside without extra expense. Brick, stucco, half-timber, or any other type of exterior finish can be applied.

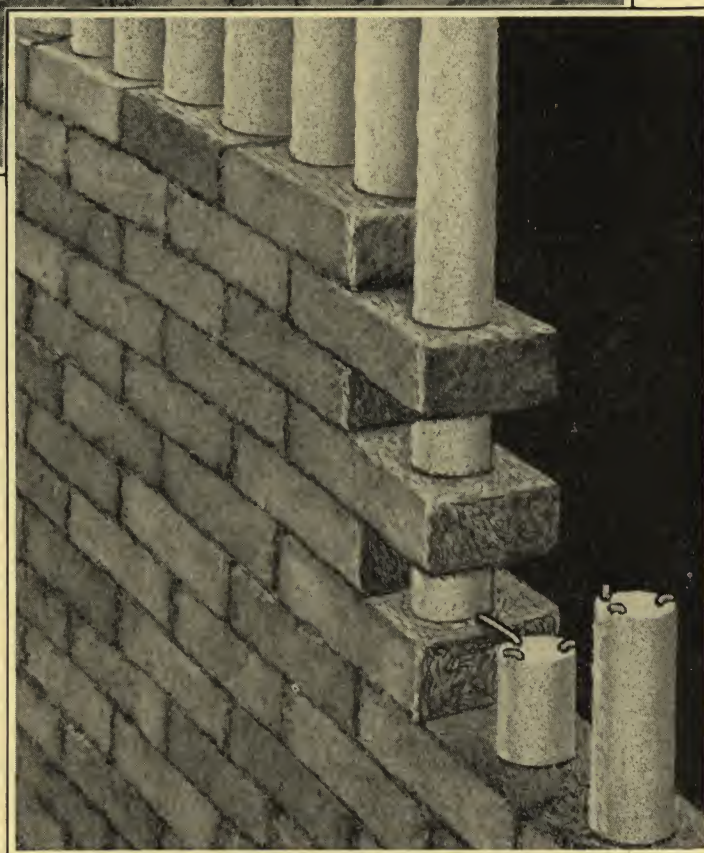
Stockade walls actually improve with years—there is nothing to deteriorate. According to the Armour Institute of Technology, a Stockade wall has 67,500 pounds (almost 34 tons!) resistance



per lineal foot at eight feet high. A frame structure has only a fraction of this strength.

At the same time, you have 3 to 5 times the insulation afforded in most types of construction.

Hundreds of Stockade homes, of every type, have been built during the past five years in every part of the United States. Several are pictured in the following pages. These homes have successfully weathered all kinds of climatic conditions. Architects, builders and contractors, everywhere, are finding that Stockade fully qualifies as a building material that affords: (1) better structural engineering, (2) greater beauty, (3) greater insulation, and (4) greater economy.



"Columns of Holes" filled with reinforced concrete

Stockade is Simply and Easily Erected

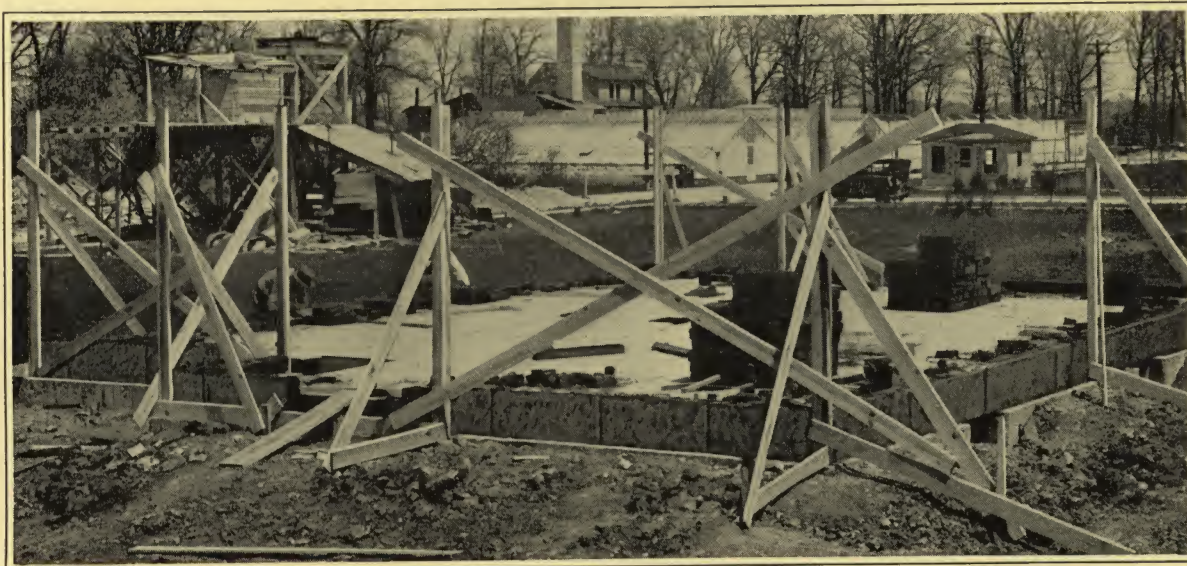


Illustration A

Construction with Stockade is fast, simple and economical. Few tools are required.

Note in illustration (A) the simple angular uprights that act as guide-posts during construction. (See p. 10 for detail.) Above the foundation a concrete girth is poured using the 16" x 32" Stockade slabs notched where necessary to fit over the floor joists. Then when four courses of the Stockade molds have been laid around the entire

building, reinforcing clips are placed in the holes. The holes are then filled with concrete, reinforced with more steel clips as the wall progresses. (See pp. 11-12-13 for details.)

In illustration (B) the arched doorway and window sash have been put in place. There are no expensive operations necessary, yet the most unusual architectural effects are possible. Note how simply the Stockade wall is built up around the sash and the arched door.

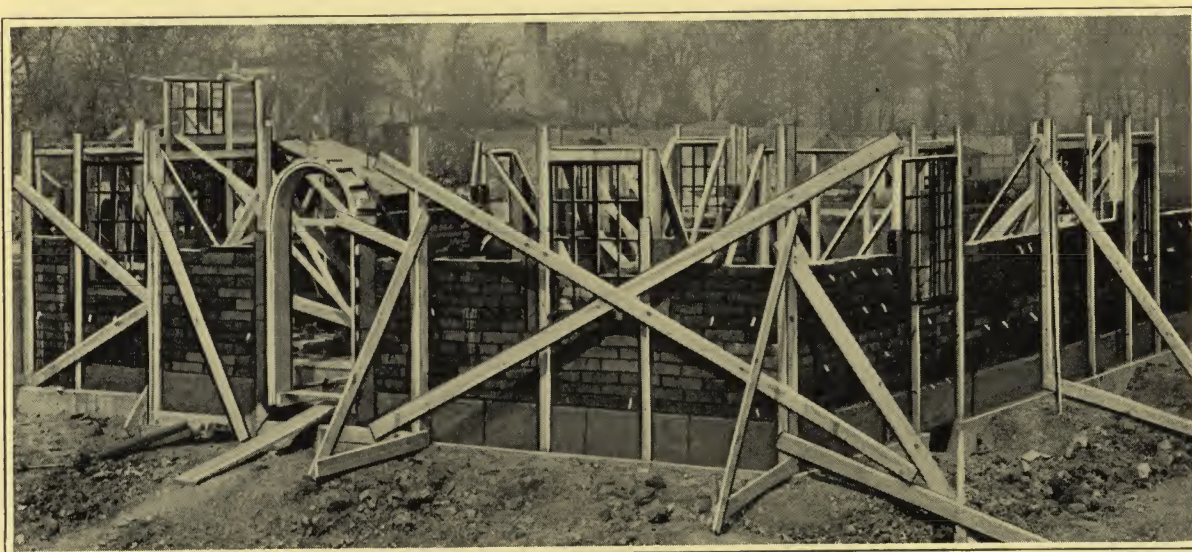


Illustration B



Illustration C

When the Stockade wall reaches the roof a reinforced concrete girth or beam is built completely around the building. This ties all the columns together resulting in a monolithic concrete frame, and also forms the basis for anchoring wood plates with bolts. Since the home illustrated was planned for a brick veneer finish, provision was made for anchorage by embedding galvanized brick ties in the concrete columns.

These can be seen in the illustration (C) protruding through the Stockade walls.

Gables are quickly and easily constructed with Stockade. Note in illustration (D) below, and (E) at the top of next page, how the molds are cut to a proper pitch and then fitted together, the columns of reinforced concrete running down to the girth that supports the second floor. (See page 23 for detail drawing.)



Illustration D

Illustration (F), below, shows the simplicity with which piping is handled in a Stockade wall. Space for the larger pipes is provided for during the construction of wall. Small pipes are set in place by raking out a depression after the wall is erected and ready for plaster.

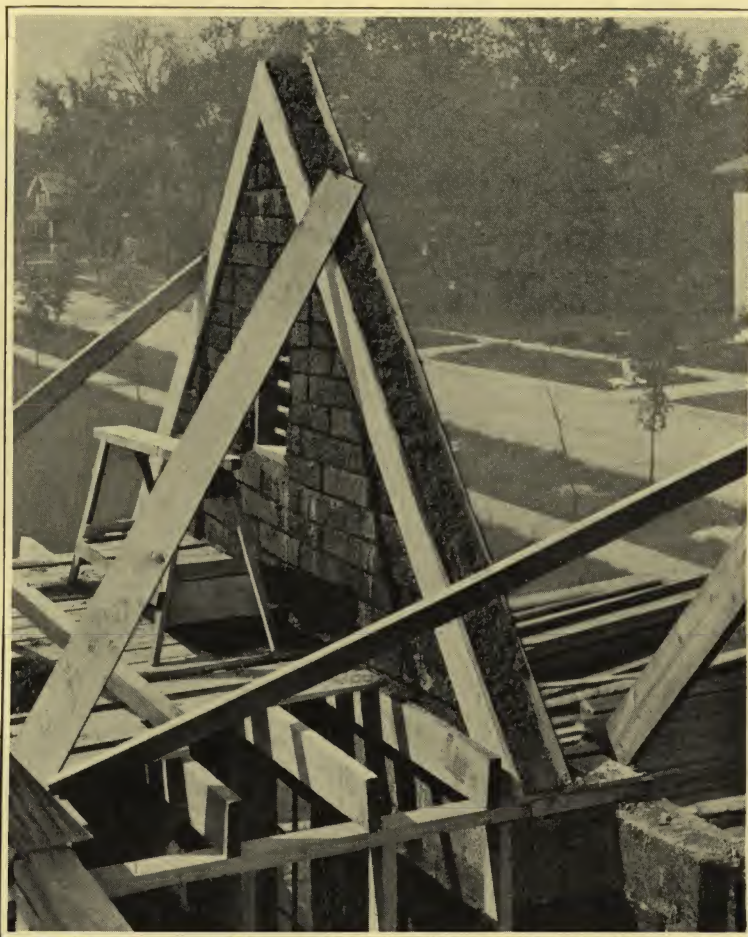


Illustration E

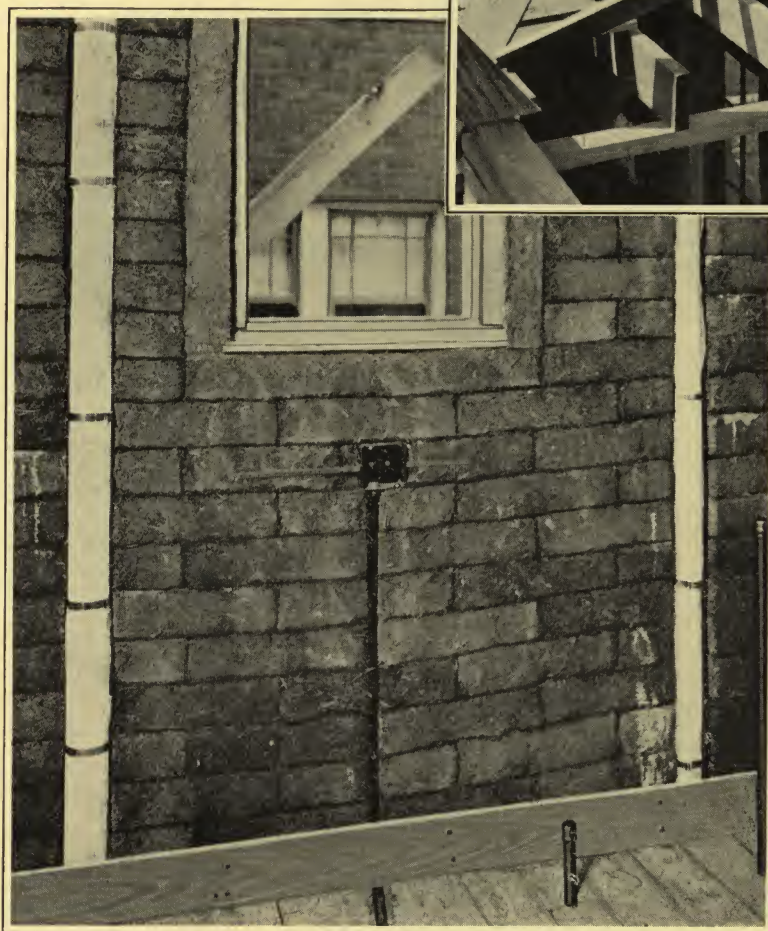


Illustration F

Comprehensive details and drawings of Stockade construction for walls are printed and explained in the succeeding pages. There is nothing else in the building material field like Stockade; nothing simpler to build with; no single material which contributes so much insulation, strength and permanence, or permits such wide latitude for architect and homeowner to achieve individuality of design at no extra expense.



*Attractive two-story
Stockade home at
Toledo, Ohio.*



*Stockade bath house adja-
cent to private swimming
pool, Lake Forest, Illinois.*



*A Stockade garage and servants quarters at
Lake Forest, Illinois.*



*A delightful Stockade home
at Lake Wales, Florida.*



*Western Springs, Illinois
—an attractive small home
built of Stockade.*



*One of many splendid residences, brick veneer
over Stockade, Milwaukee, Wisconsin.*



*Residence at Orion,
Michigan, built
entirely of Stockade.*



*A home of unusual design
and built of Stockade—
Toledo, Ohio.*



*Under construction—a beautiful home at
Short Hills, New Jersey.*



*Another Stockade home,
brick veneer, Bellwood,
Illinois.*



*Picturesquely situated, a
Stockade home at Rye,
New York.*



*Quaint cottage, built of Stockade, at
Brookville, L. I.*



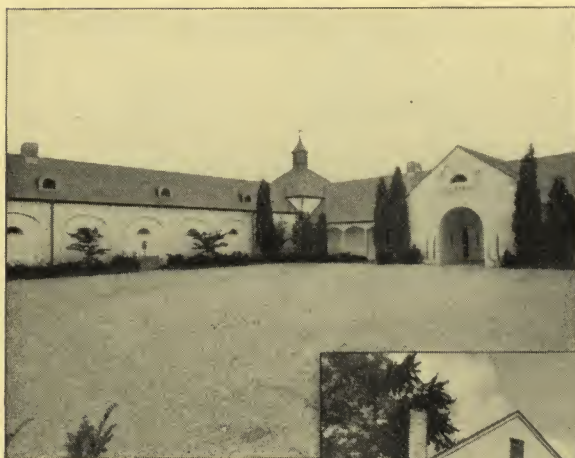
Modern brick veneer Stockade home at LaGrange Park, Illinois.



Another fine example of brick veneer over Stockade, Milwaukee, Wisconsin.



Crystal Lake, Illinois—a delightful residence with deep reveal arched two-story window.



Stables at Brookville, Long Island, Stockade built.



Nearing completion—another Stockade home at Western Springs, Illinois.



A rambling Stockade home at Scarsdale, New York.



Spanish type Stockade home, Tulsa, Oklahoma.



Stockade Garage at Des Plaines, Illinois.



Palos Park, Illinois—a Stockade home under construction.



School house built of Stockade at Clifton, Colorado.



A charming home at Wilton, Connecticut, built of Stockade.



Brick veneer house and garage built of Stockade, LaGrange, Illinois.

The Erection of Stockade

To build with Stockade is to build quickly and easily, saving time and money, doing a better job and achieving a permanent result which can be a source of pride and satisfaction alike to architect, builder and owner.

Steps in the erection of Stockade, from foundation to roof, are detailed here and explained in easily understood terms.

Stockade may be erected on monolithic concrete or concrete block foundations. In foundation walls or footings intended to support Stockade walls, anchor rods ($\frac{1}{2}$ " x 16") are placed at all corners and at approximately 3-foot intervals, 4" from the inside face of the wall, embedded in the concrete to a depth of 8" at the final pouring

and before the concrete has set. (See figure 2 on opposite page.)

If foundations are of concrete blocks, the top course is blocked off with wire lath or other material to permit the concrete to run down into the holes.

Before starting the Stockade wall, angular uprights, well braced and extending to height of proposed Stockade wall, are erected at all corners. (Figure 1.) These can be made with 2" x 6" boards, nailed together at right angles, and set plumb and square 8" from inside face of wall.

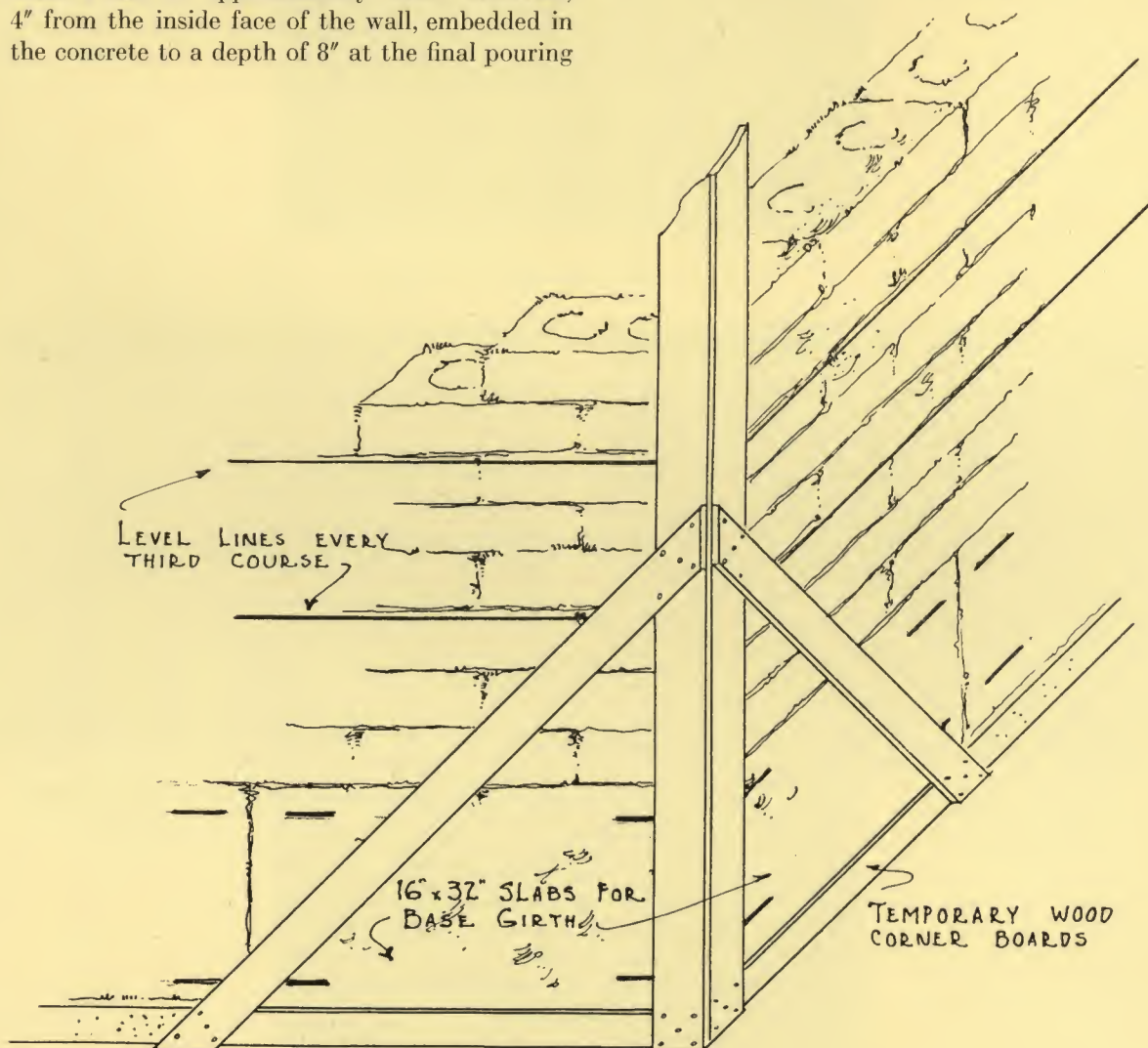


Fig. 1

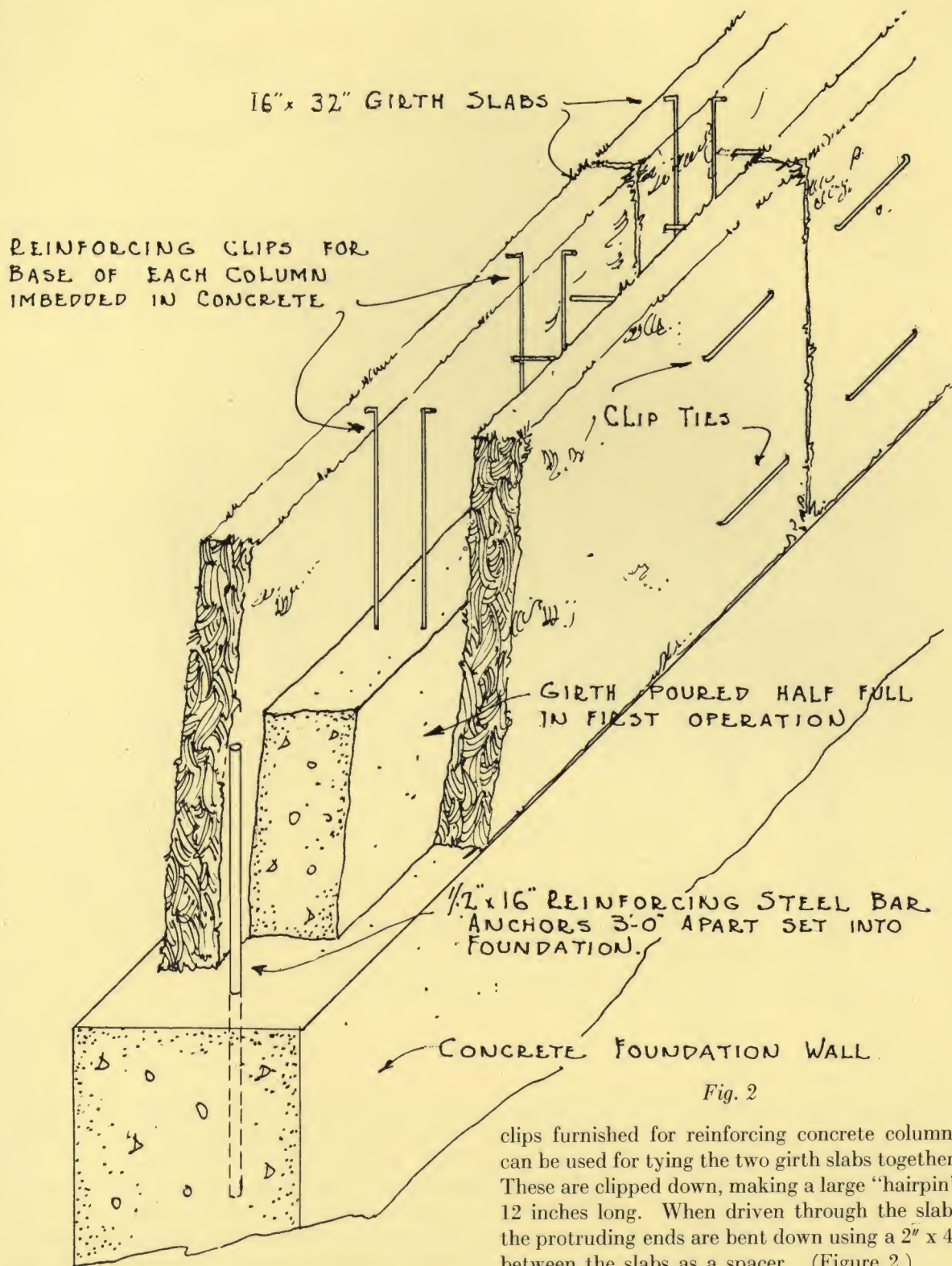


Fig. 2

clips furnished for reinforcing concrete columns can be used for tying the two girth slabs together. These are clipped down, making a large "hairpin" 12 inches long. When driven through the slabs the protruding ends are bent down using a 2" x 4" between the slabs as a spacer. (Figure 2.)

The first course of Stockade is a girth, formed by Stockade slabs 16" x 32" x 2", placed parallel to each other, 4" apart, joints closed. Steel wire

Later, when the concrete has been poured and allowed to harden, the ends of these clips can be driven down flush with a hammer.

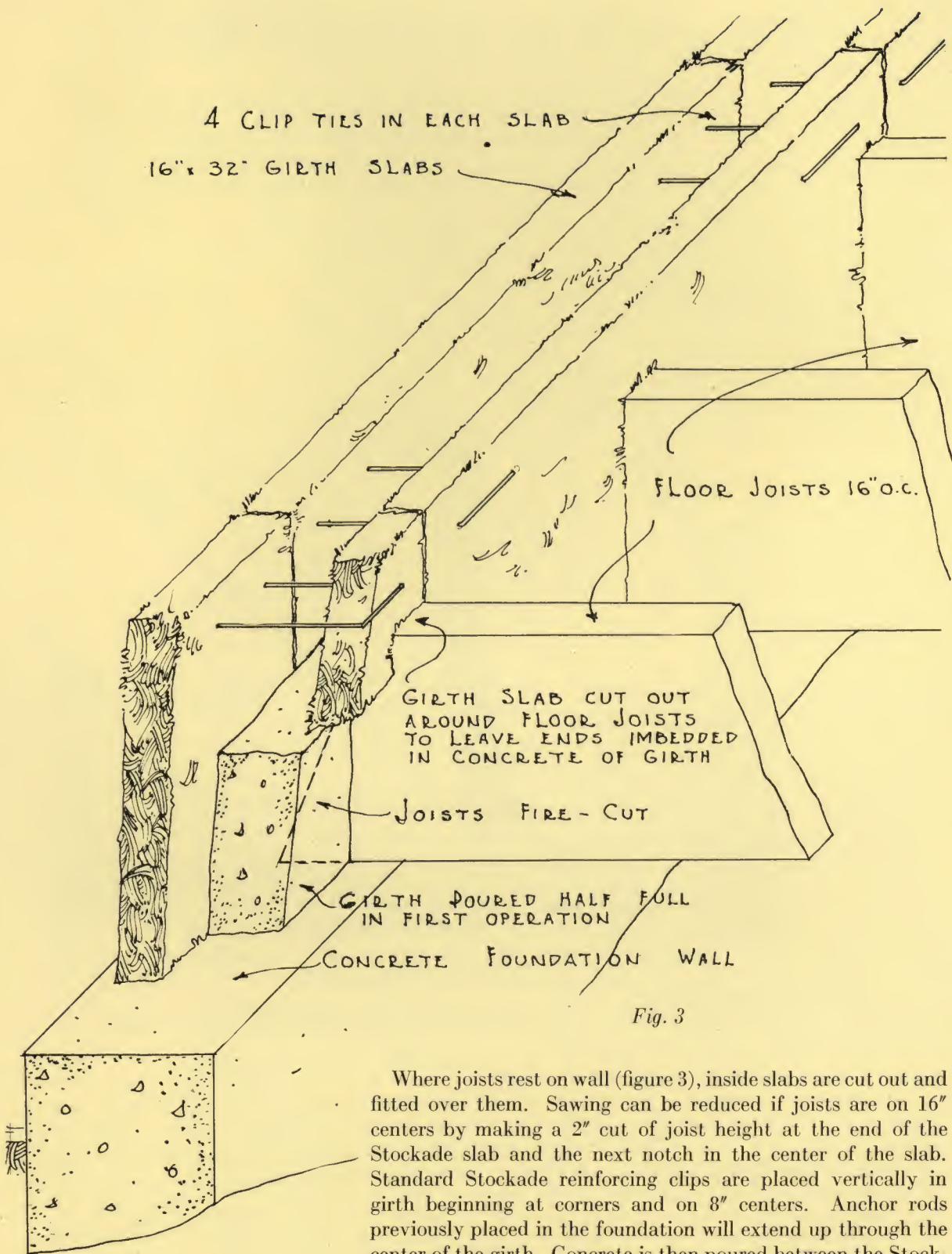


Fig. 3

Where joists rest on wall (figure 3), inside slabs are cut out and fitted over them. Sawing can be reduced if joists are on 16" centers by making a 2" cut of joist height at the end of the Stockade slab and the next notch in the center of the slab. Standard Stockade reinforcing clips are placed vertically in girth beginning at corners and on 8" centers. Anchor rods previously placed in the foundation will extend up through the center of the girth. Concrete is then poured between the Stockade slabs to a height of about 8" as indicated.

Illustration and Description
of Clips on Page 14

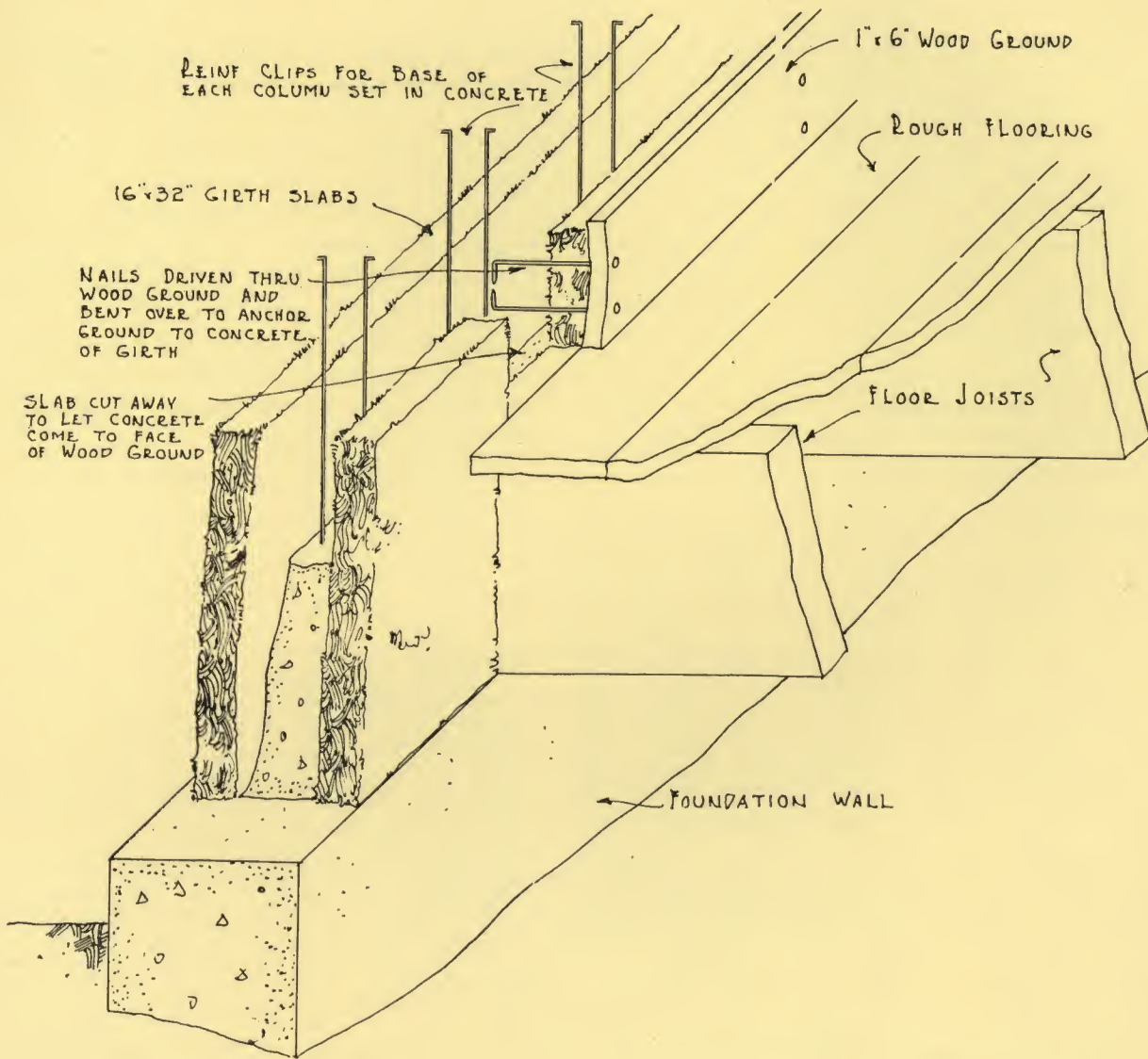


Fig. 4

Preferably after concrete has hardened, the inside girth slabs are cut out, down to the rough floor to a width of 3" on 16" centers. (Not directly over joists, however, since this would weaken slab.) A $\frac{7}{8}$ " board is placed on edge, resting on the rough floor and running parallel with, flush against and nailed to the inside slabs. This covers all the 3" openings, provides a ground for plastering and a nailing base for the base-board. Spikes are then driven through the $\frac{7}{8}$ "

board at center of each 3" opening; the points are bent and will become embedded in concrete when the girth is filled. (Figure 4.) This latter operation can generally be done more easily before board is nailed to slabs.

Standard clips are placed vertically on 8" centers and allowed to extend 8" above top of girth when filled. The girth is then filled to the top with concrete. When the girth is filled, the builder starts laying Stockade molds in courses. (See next page.)

Building the Wall

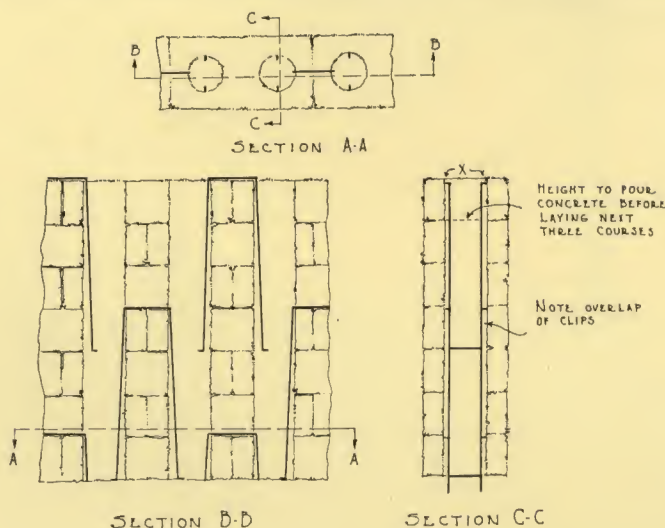
When girth is completed, standard clips have been left extending 8" up from girth at 8" intervals, embedded in the concrete. These clips extend up through the holes in the first course of Stockade molds, which are now laid dry on the completed girth, starting at the corners, fitting the corner molds into the angular uprights and working toward the center of each wall, closing all joints. Three more courses are then laid, interlocking corner molds and breaking (or staggering) joints.

In all, four courses are laid in this way, from corner to corner, bringing wall up at even height all the way around. Looking down on the wall,

you see the holes in the molds, one directly over the other and extending down to the girth.

Now, after inserting reinforcing clips into all holes, concrete is poured into all holes to the height of the third course, leaving fourth course open as a key for the next pouring and an overlap for steel reinforcement. A coal scuttle with a covered snout serves as a convenient means for placing the concrete.

This done, three more courses of molds are laid, reinforcing clips inserted and concrete poured to the depth of three courses, leaving the last and topmost course open as before.



The proper placing of clips is illustrated in sections AA, BB and CC. Notice overlapping of reinforcement; how molds and concrete columns are joined both vertically and horizontally by the clips.

Repeating this process brings the Stockade wall up, three completed courses at a time. By laying courses at even height all the way around, carpenters laying Stockade molds can keep ahead of laborers and always have courses ready to receive concrete.

Concrete should be well puddled with a $\frac{1}{2}$ " rod when poured. Where there is a strong wind, wall should be shored and protected until concrete hardens.

When laying the first course of molds, it may be found that they do not run full from corner to corner. In this case, center web of mold is cut out and mold is fitted to opening, sometimes making a larger column of concrete at this point. Cutting and fitting in this way continues up in a straight line through succeeding courses. (This operation is unnecessary where building is designed on an 8" unit basis.)

A straight and even wall is laid by stretching a horizontal line from corner upright to corner upright every three courses. Tap the wall with a 2" x 4", bringing molds back into line, if irregularities should appear after inserting clips.

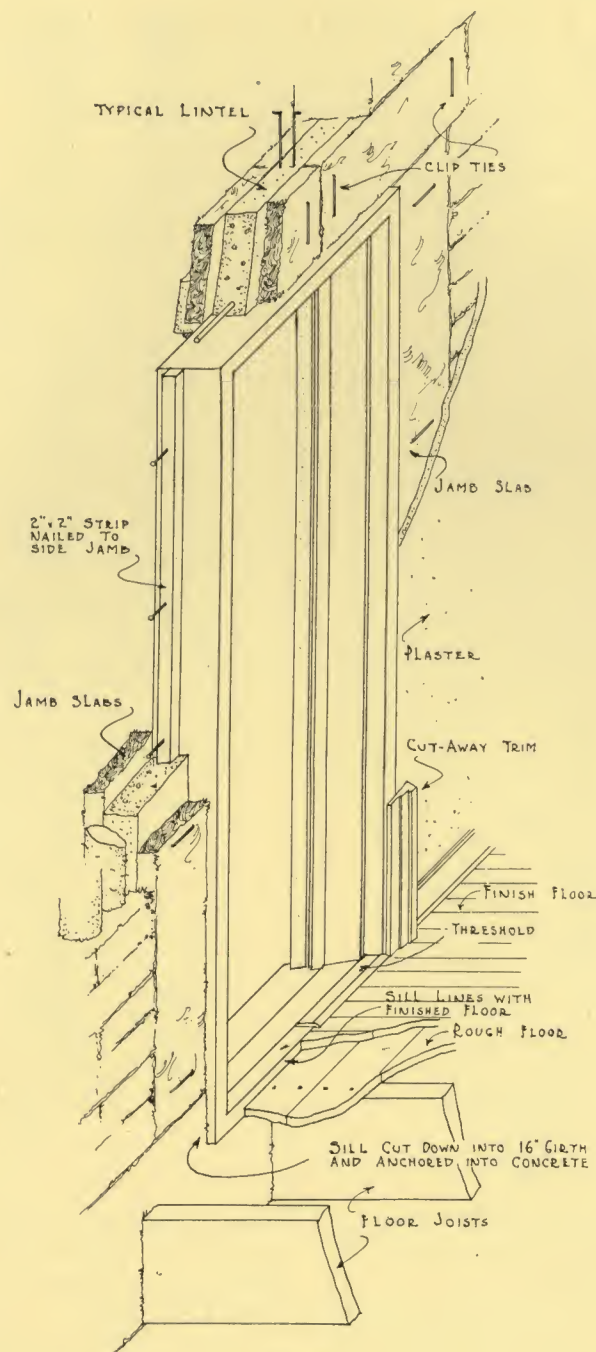


Fig. 5

Setting Window and Door Frames

Figures 5 and 6 show how door frames and window frames are set in the Stockade wall. Door frames are set in place before completion of girth, cutting out slabs where necessary to bring frame

down to proper level. Window frames are set bucked up from floor and braced in place 4" above Stockade wall.

Nail vertical 2" x 2" strip in center of each side

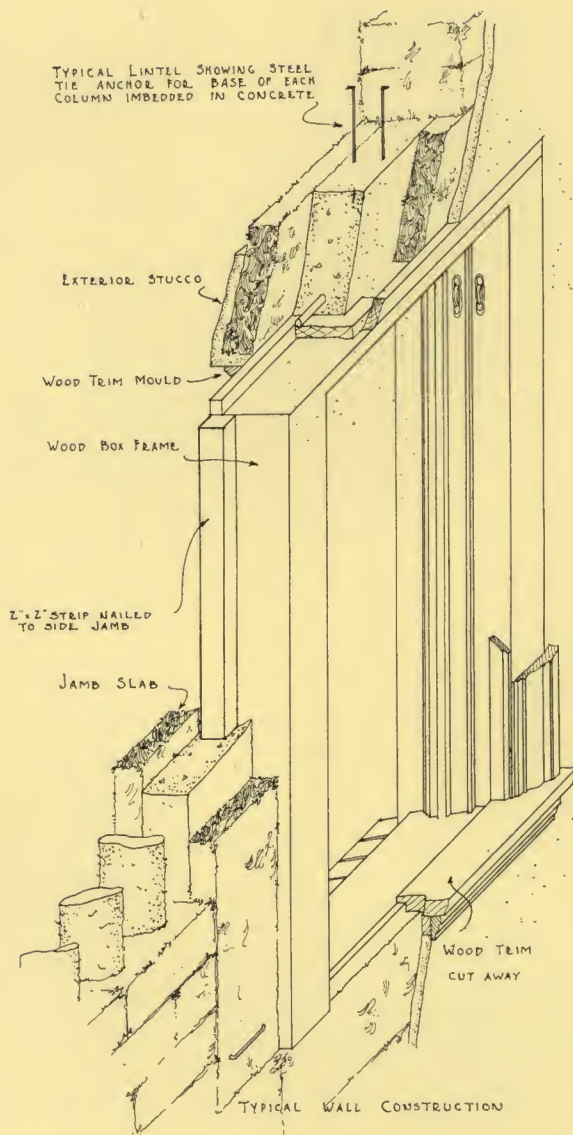


Fig. 6

of both door and window frames, spikes driven in the 2" x 2" allowing heads to extend out 2½" to become embedded in concrete.

Stockade slabs 8" x 32" x 2" are placed vertically and at right angles to frames on inner and outer sides of Stockade wall, slabs nailed to frame and outside edges of slabs held together with steel clips. (See p. 11.)

Stockade molds are then laid in the usual way flush against Stockade slabs, using whole or half molds at alternate courses. When reinforcing clips are placed in these molds, one clip will extend from column next to slabs into the trough between

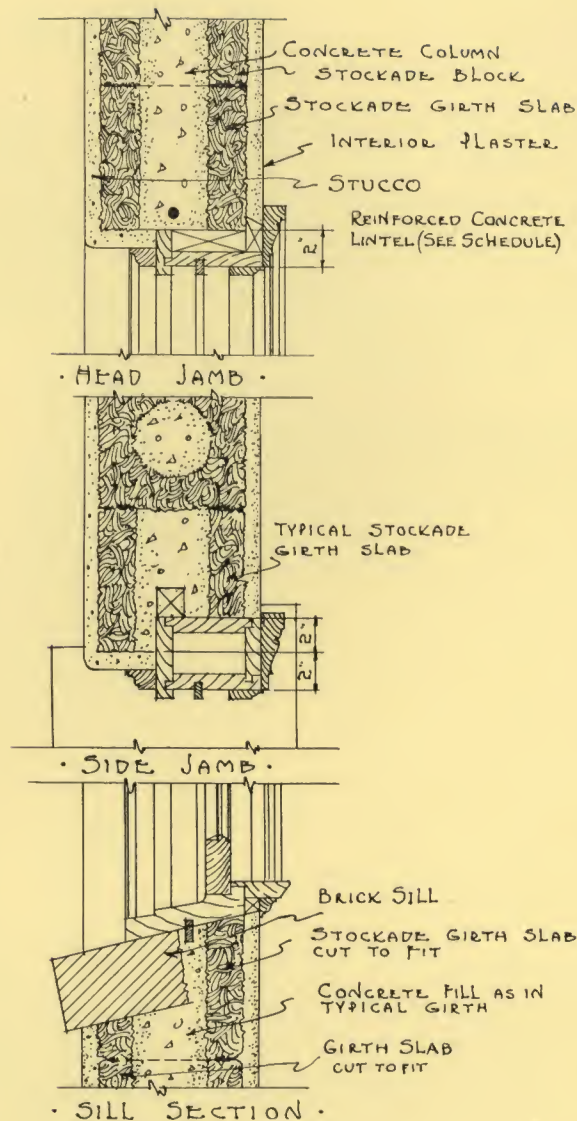


Fig. 6A

slabs, another clip being placed in the trough. Concrete is poured between slabs to the same height and at the same time the molds are filled.

The 4" opening below the window frame is boxed in with ripped down slabs and filled with concrete. At the same time 2" x 4" or 2" x 6" is anchored in with spikes to act as a ground for sill and apron. Face boards or other wood trim require a nailing ground provided by nailing 2" x 2" boards to the frame before Stockade slabs are set in place.

Figure 6A illustrates a sectional view of window frame illustration.

Fig. 7

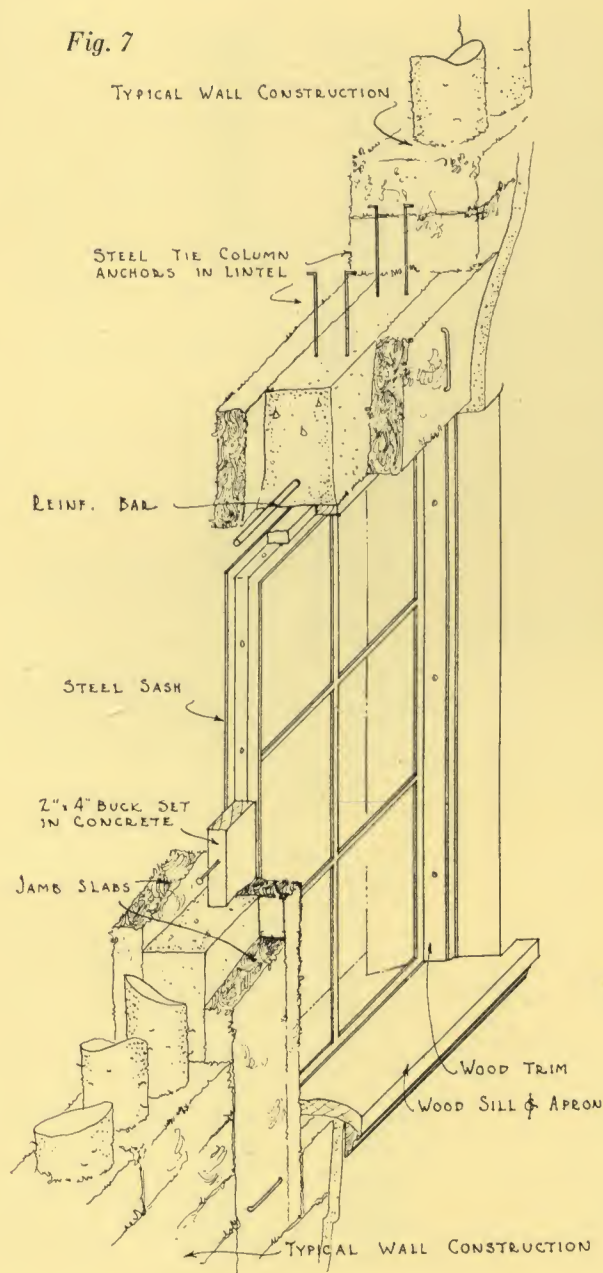
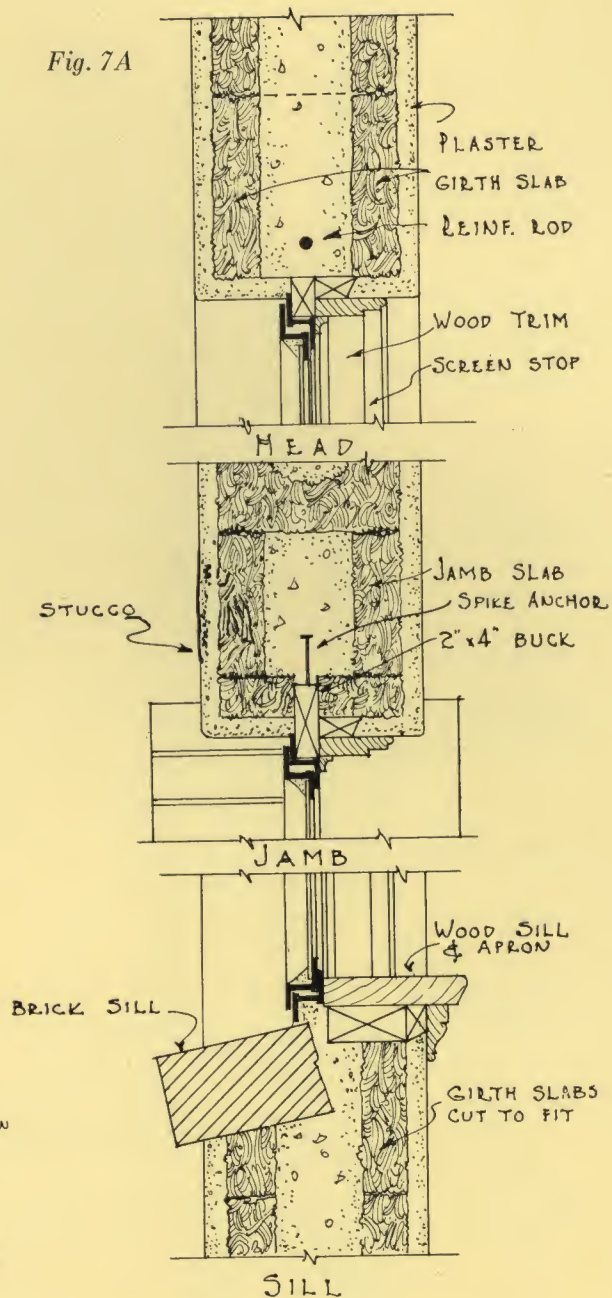


Fig. 7A



Steel Casement

The setting of steel casements is just as simple and easy as all other phases of Stockade construction.

A special frame is made of 2" x 4" boards, across top and down both sides to 4" below bottom of sash, the 2" side of these boards facing in. Spikes driven into the outer 2" side extend $2\frac{1}{2}$ " to become embedded in concrete. Frame with sash fastened

in place is set in Stockade wall, allowing reveal of any desired depth.

The Stockade wall is carried up past the frame as previously explained using slabs to box in sides of frame and bringing blocks up flush to slabs. The 4" opening below sash is closed with Stockade slabs providing ground or base for sill and apron.

Figure 7A illustrates the sectional view.

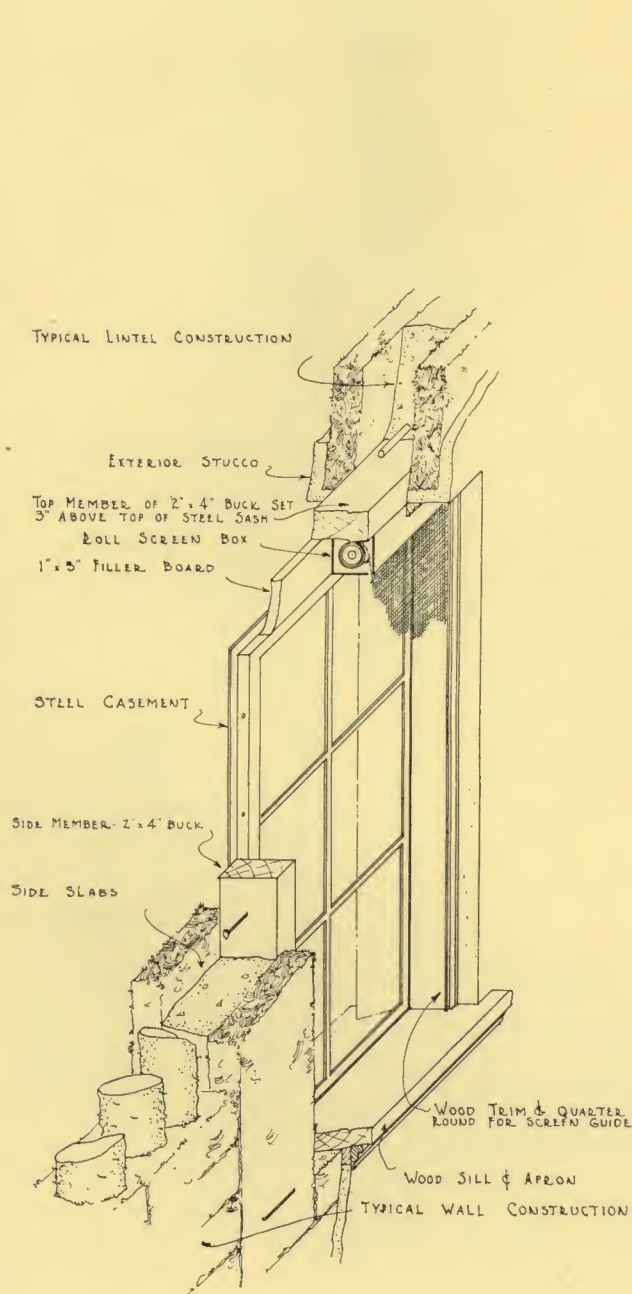


Fig. 8

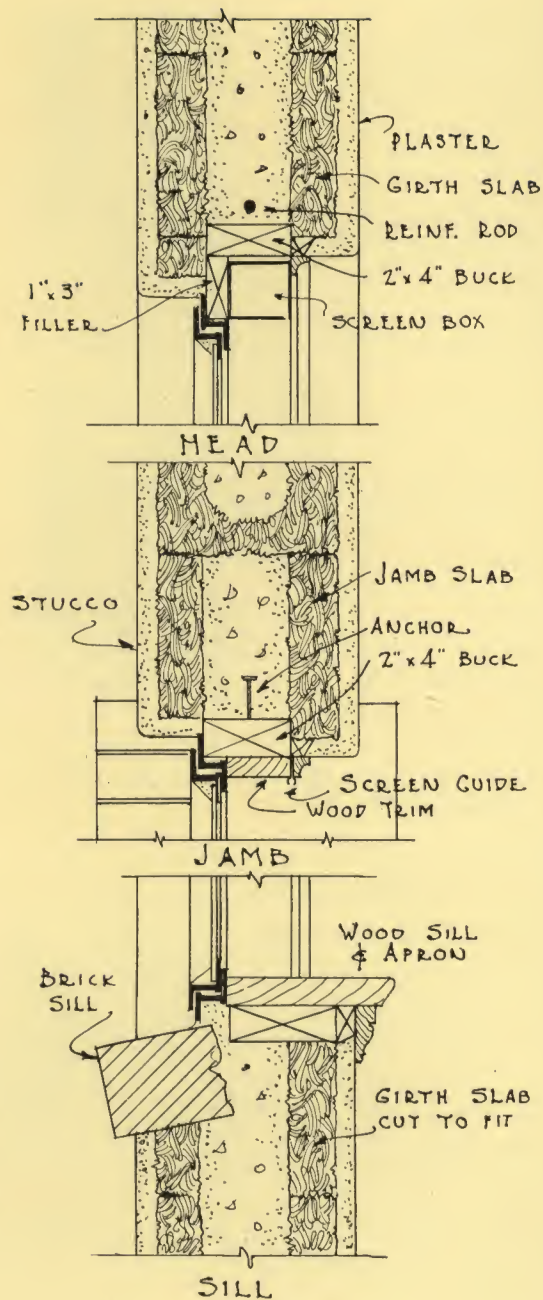


Fig. 8A

Steel Casement with Roll Screen

When roll screens are to be used with steel sash, the method is very similar and equally simple. A frame of 2" x 4" boards is made with the 4" side facing in, the spikes driven into the outer 4" side and extending 2½". The sash is fastened to the frame 3" below its top and a 1" x 3" board fastened

to top of sash to provide opening for screen box. (See Figure 8.) Screen guides are fastened to 4" face of 2" x 4" on inside edge. A section view of this construction is shown by Figure 8A. The Stockade wall is brought up in the usual way with slabs and molds.

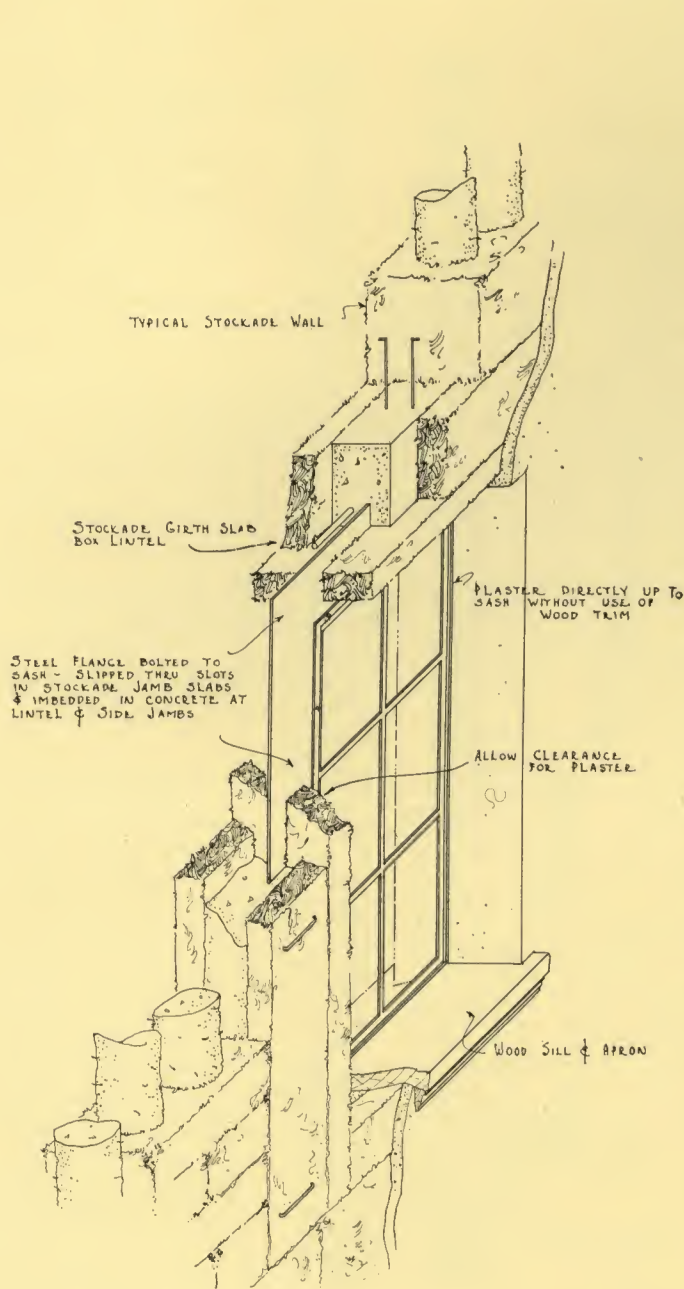


Fig. 9

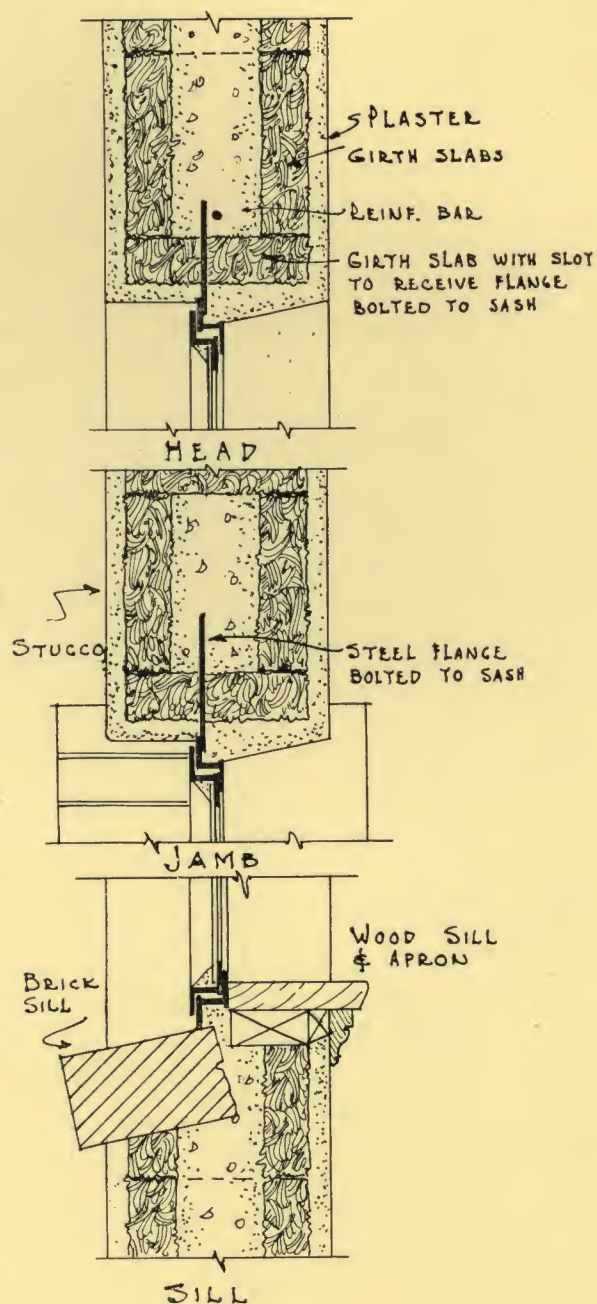


Fig. 9A

Steel Casement without Wood Buck

Steel sash may be fitted into Stockade walls without wood frames. A box is made of 3 Stockade slabs set in place on the walls, a slot sawed through cross or jamb slab through which extends a steel flange bolted to sash, which becomes

embedded in concrete. (Figure 9.) When roll screens are to be used, an opening for screen box is made in the lintel above sash and ground placed for screen guides. See figure 9A for sectional view.

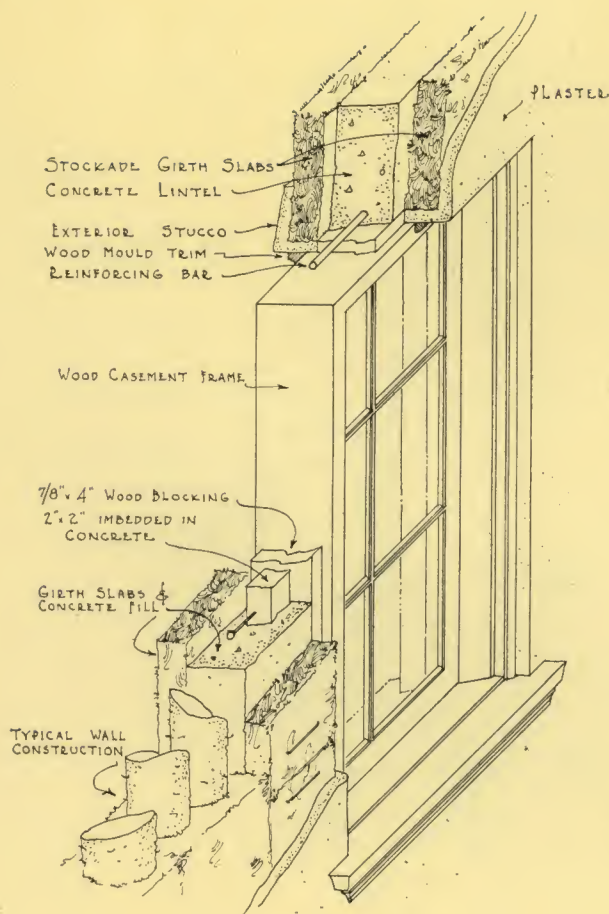


Fig. 10

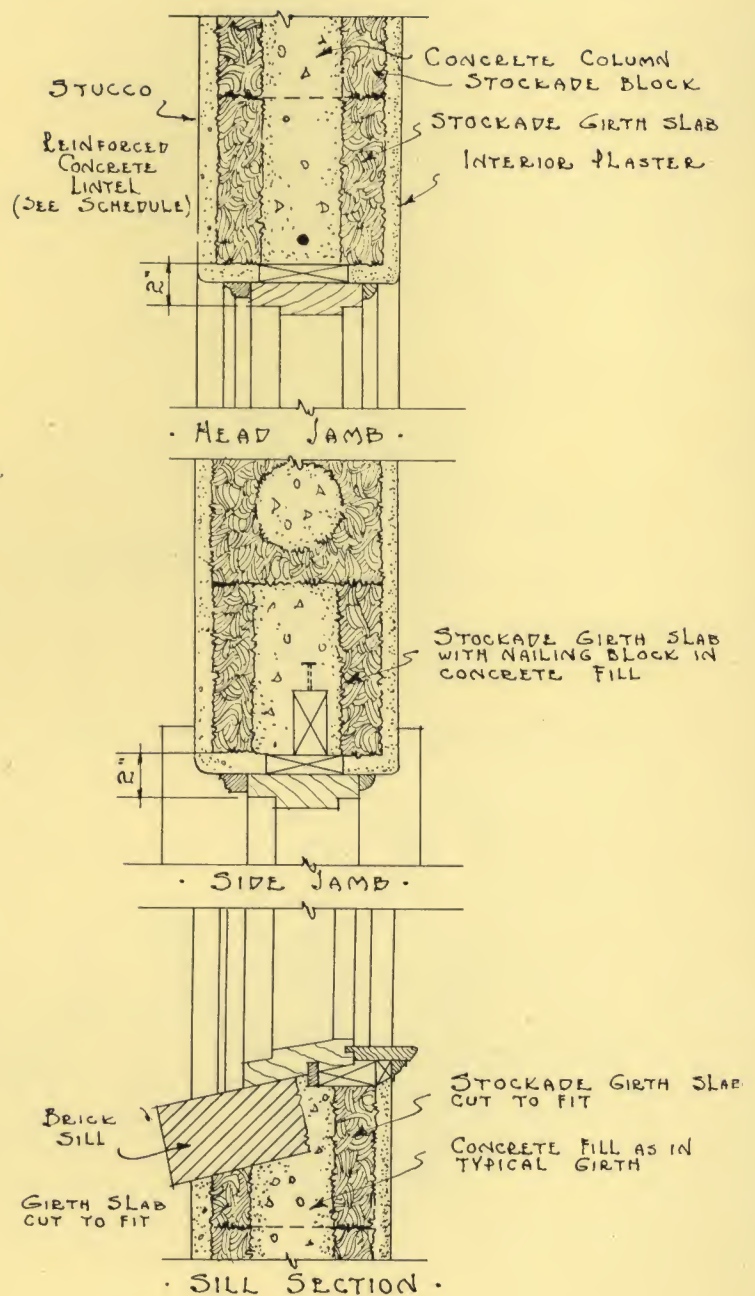


Fig. 10A

Wood Casement with Plaster Return Trim

Installation of wood casement frames is the same as double hung frames. When plaster returns are to be used, nail a $\frac{7}{8}$ " blocking board to frame to allow groove for stucco to return.

(Figures 10 and 10A.)

Opening should be left below frame to take brick, cast or other sill. Brick and cast sills should rest on 2" of poured concrete.

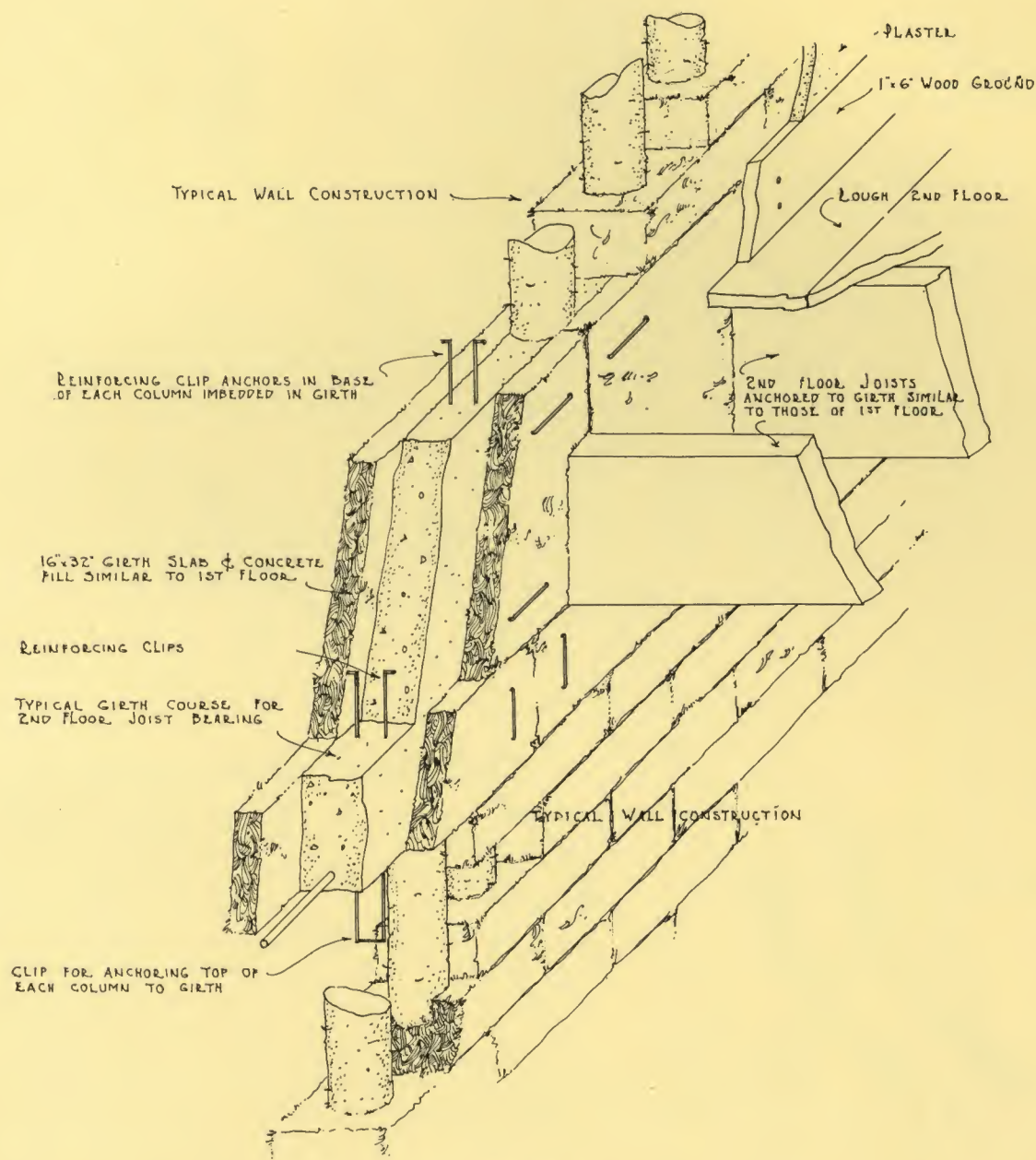


Fig. 11

Floor Level Girth

For two story buildings, at the first floor ceiling height, girth 8" high is formed in the same manner as the 16" slabs formed a girth on foundation. Reinforcing clips are placed in the girth extending 4" into holes of molds below and extending 4" above level of top of girth. Half inch reinforcing rods 12 feet or longer extend hori-

zontally inside the girth, overlapping 16". Rods are raised to become embedded in concrete 2" up from bottom of girth and in middle of girth.

After concrete hardens, joists set and rough floor laid, a girth is formed with 16" slabs and wall carried up as previously explained for first floor.

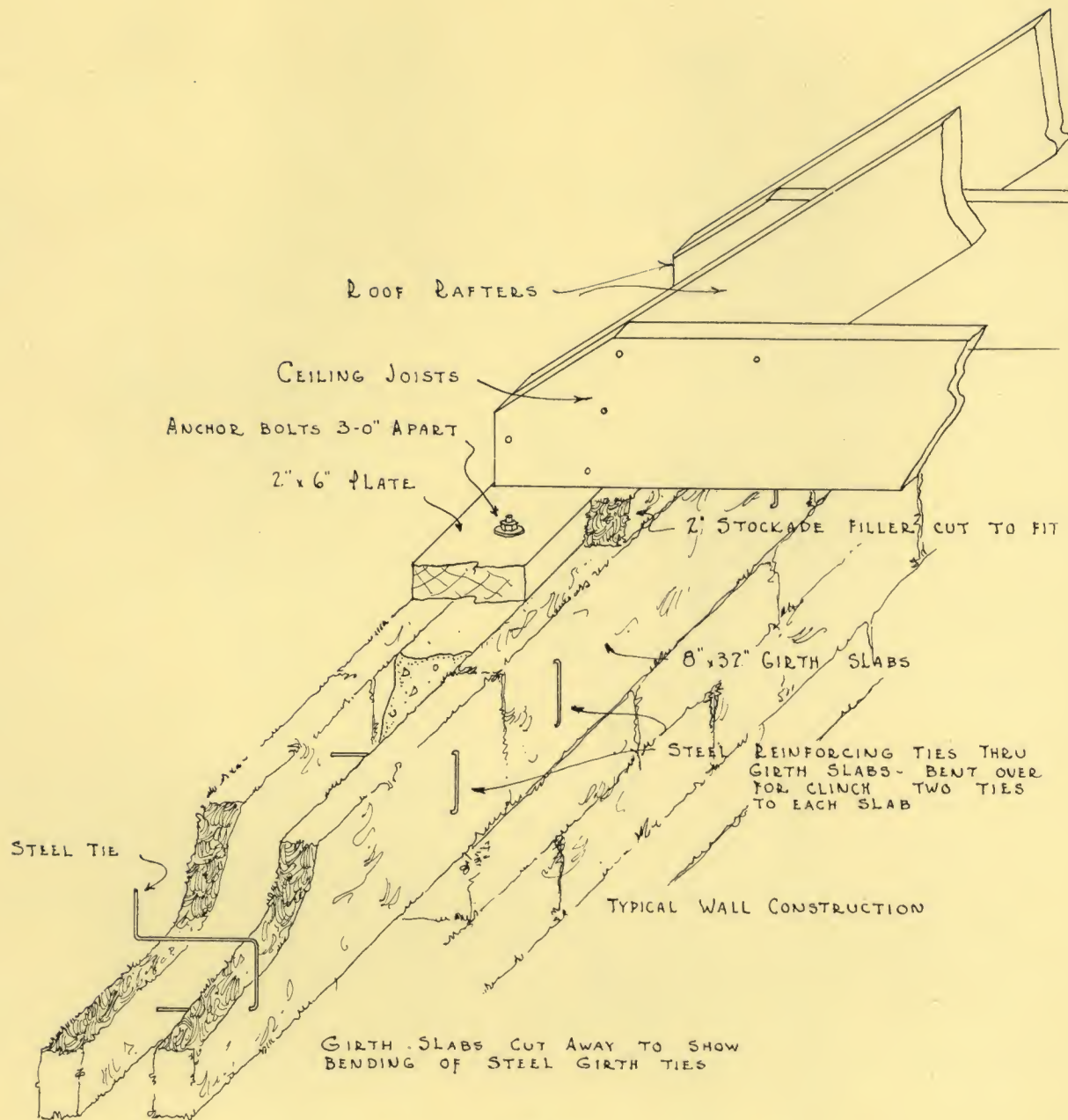


Fig. 12

Setting Plates for Rafters, Joists, etc.

Before setting a plate on the Stockade wall for rafters, ceiling joists or other purposes, an 8" deep girth is formed. When concrete is poured, $\frac{1}{2}$ " bolts are embedded in the concrete at all corners and at 3' intervals, extending up to protrude 1" above plate when set.

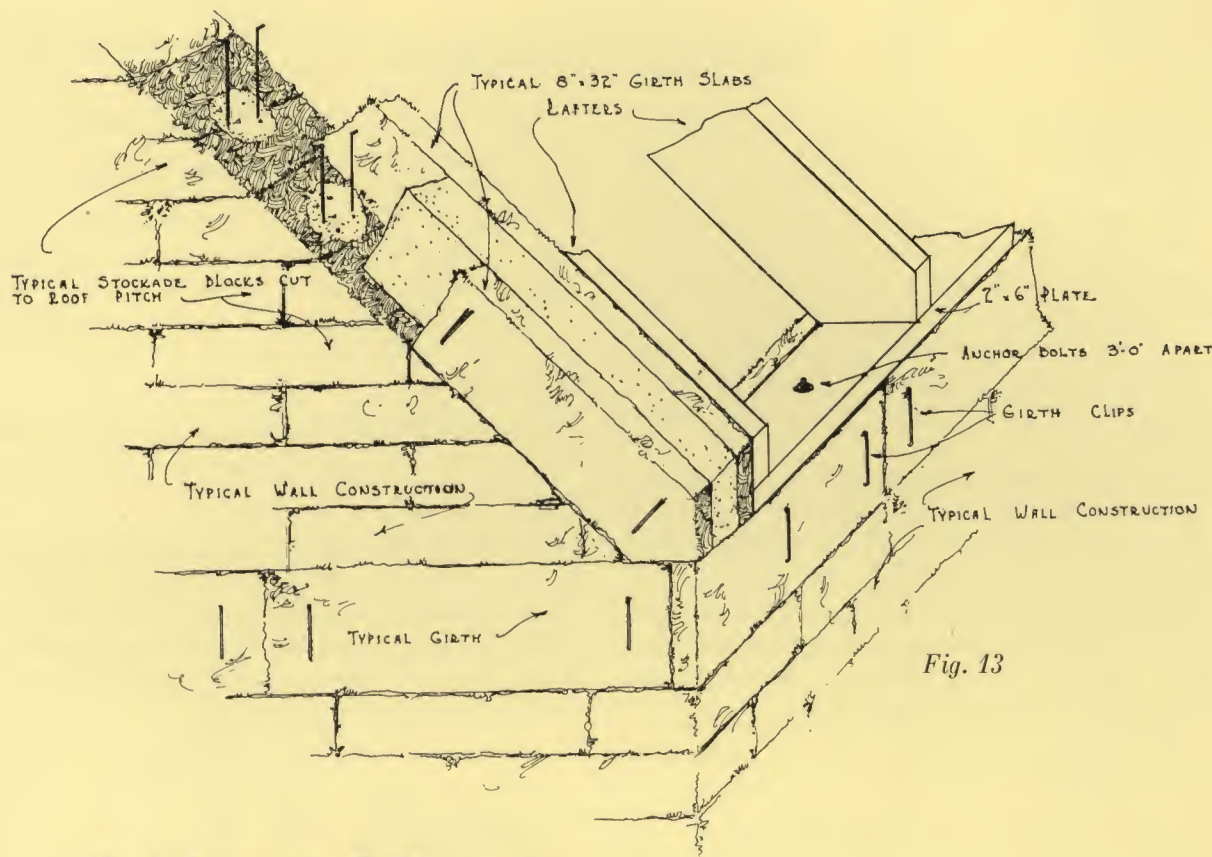


Fig. 13

Gables and Dormers

Gables start from girth, molds cut to proper pitch and set back 6" or width of rafter. When molds are brought to point of gable on each side (Figure 13), the rafter at outside face of gable may be used for outer form of this girth, using either a $\frac{7}{8}$ " board or girth slab for inside wall. Reinforcing clips extend up from columns into girth. On steep pitches temporary board may be nailed over top of girth till concrete hardens.

Outside walls of dormers extending up from Stockade walls may be formed of Stockade molds. Dormers framed out of roof and resting on rafters may be formed of Stockade slabs nailing slabs to wood sheathing, bending nail heads over or using metal washers.

Recesses

In building a recess 6" deep into a Stockade wall, a frame is made of 2" x 6" boards, Stockade slabs being nailed to back of this frame. Set frame in wall, slabs flush with outside face of wall. (Figure 14.) The wall is built around this frame in the conventional way, previously described.

Circle head or arched openings are built in same way. All frames are anchored to concrete by spikes driven in sides and embedded $2\frac{1}{2}$ ".

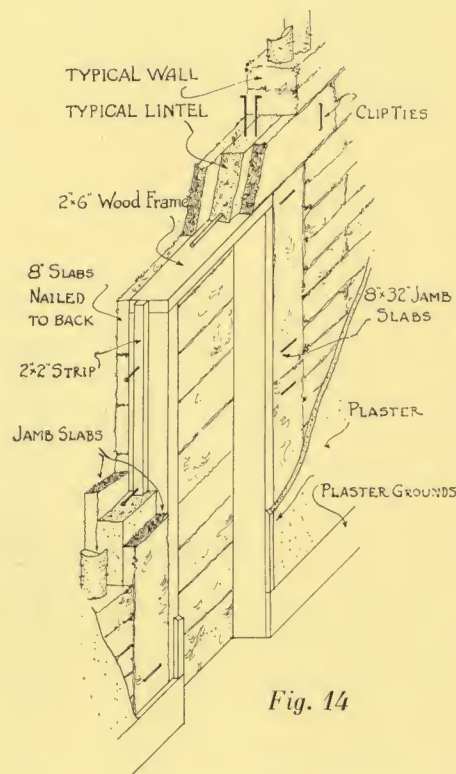


Fig. 14

Nailing Grounds

The Stockade mold is cut out as illustrated. The opening is then covered with a 1" x 6" board into which two spikes have been driven and the ends bent over. When the concrete is poured it thoroughly embeds the nails, and anchors the board firmly to the wall. Where a ground flush with the wall is desired, the Stockade molds are sawed out to accommodate a 2" x 4" with spikes through it and extending back into the holes in each mold so as to be embedded when concrete is poured.

Grounds required to support heavy objects such as sinks or bowls are made of 2" x 8" board placed in the wall in same way that Stockade slabs are used, using Stockade slabs for outside face of wall, steel clips passing through slab and through board—similar to girth construction. In addition, large spikes are driven through 2" x 8" and bent to embed in concrete when poured.

Where thought necessary, inside partitions can be anchored to Stockade walls with $\frac{1}{2}$ " bolts embedded in concrete columns, bolts placed when wall is built and extending to protrude 1" beyond 2" x 4" stud. When concrete column does not run where partition and wall meet, center of molds are cut out, allowing concrete to run from column to column. Bolts are then embedded in proper places.

Above all openings which have plaster returns, a ground is provided for brackets for curtain poles, etc.

Grounds for freeze-boards, iron railings, blinds, canopies, brackets, telephone or electric connections, supports or anything to be attached to the completed wall, are set in outside face of Stockade wall at time of building. Size of ground depends on weight or strain to be carried.

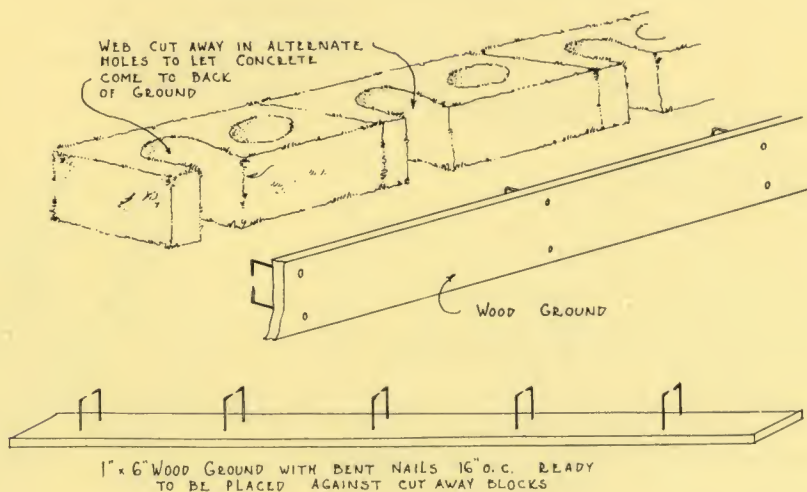


Fig. 15

Wiring, Piping and Chimneys

Where electric conduits and 1" and smaller pipes are placed in Stockade wall, an opening is raked out of wall, pipes put in place and metal lath nailed across openings.

Vertical pipes over 1" are set in openings cut out between concrete columns. Large openings

are filled with strips of Stockade slabs, with a strip of expanded metal tacked over them.

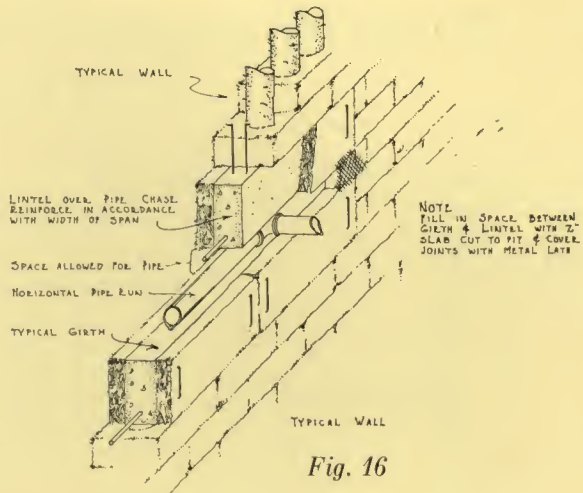
Horizontal pipes over $1\frac{1}{2}$ " are provided for when wall is laid up by forming a girth above and below as illustrated in figure 16. Distance between upper and lower girth is determined by the size of

Wiring, Piping and Chimneys

(Continued from preceding page)

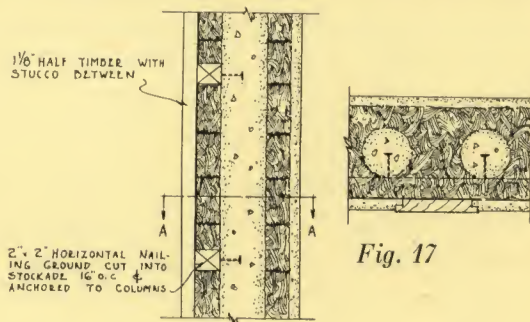
pipe. Reinforcement is provided in the girths dependent upon length of opening. Both sides of opening are closed with Stockade slabs and expanded metal tacked over the joints before application of plaster or stucco.

Chimneys with Stockade exterior should have flue lining and 8" of brick built inside Stockade wall.



Half Timbering

Several methods for anchoring half timber construction to Stockade walls are available. Probably the simplest method is the one illustrated,



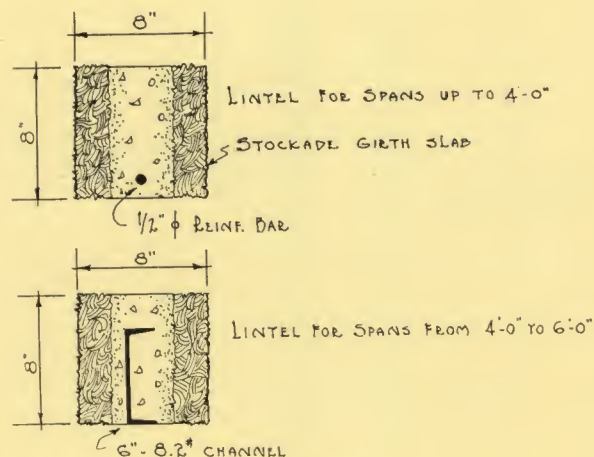
where 2x2's, 2x4's or 2x6's are embedded in the Stockade wall and anchored to the concrete columns by spikes or bolts.

These grounds may be embedded as frequently as necessary, but 16" is suggested as probably the most satisfactory spacing for all purposes.

In order to have the most satisfactory results, the timbering should be thoroughly primed with linseed oil on all sides to prevent absorption of moisture from the stucco and subsequent shrinkage leaving cracks through which water can enter. Upper edges of horizontal members should be flashed.

Lintels

Lintels are built over all openings when the Stockade wall comes up level with tops of openings. Stockade slabs 8" x 32" are set parallel to each other 4" apart and extending over the wall on each side so that ends will rest on concrete columns running down to girth. Slabs are held in place by steel clips extending through both slabs and bent over as in girth construction. Stockade molds are then brought up level with top of lintel. Horizontal reinforcements, varying with length of span (Figure 18), are placed between slabs. Reinforcing clips extend down from each end of lintel into supporting columns. Clips are set on 8" centers, extending 8" up into columns resting on lintel. Concrete is then poured between slabs of lintel.



Beam Supports

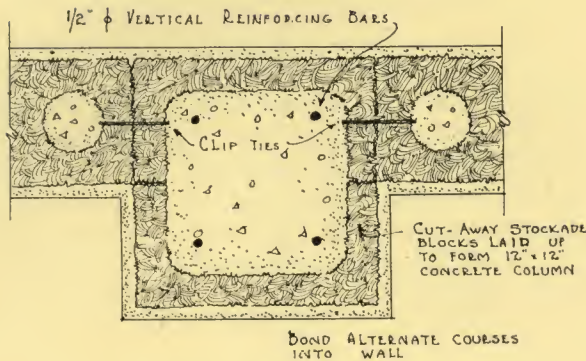


Fig. 19

Piers for beam supports are erected with either Stockade molds or 2" Stockade slabs. (Figure 19.) In either case, temporary wood forms are used to hold Stockade in place until the concrete hardens. If slabs are used, clips are put through slabs so that ends will become embedded in the concrete. At least two clips per slab should be used.

When molds are used, center web and one side of mold is cut out and two such units butted together, alternating courses and breaking joints. Reinforcement is set in place and concrete poured.

Stucco

Stucco is applied directly to the Stockade surface, which provides a perfect base with sufficient

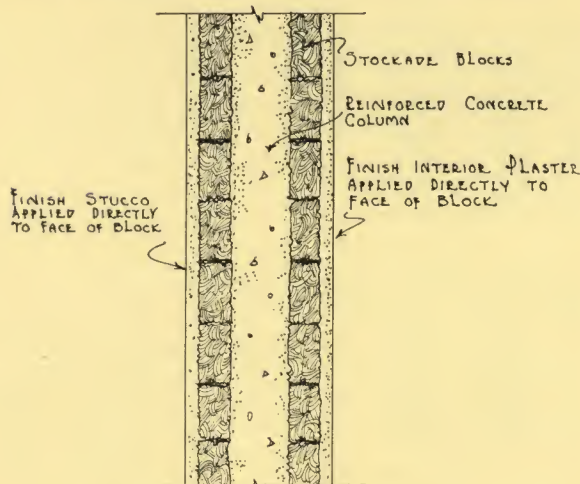


Fig. 20

mechanical bond to guarantee a permanent construction.

Three coat work is recommended, using Portland cement as a binding material. For each coat the addition of 10% of hydrated lime by weight to the Portland cement is recommended.

The texture of the finished surfaces is dependent upon the desires of the owner and architect, but reference is made for finish and specifications to the booklet "Portland Cement Stucco" published by the Portland Cement Association, 33 West Grand Avenue, Chicago. Many delightful textures are shown in this booklet and the methods described for obtaining them.

Stockade Arches

For arch openings a deep reveal may be obtained by placing the 16" side of the Stockade mold either across the end of wall extending 4" out on either side, or flush with outside face.

In both cases, molds are laid up in order as the wall progresses forming two columns which extend up through arch. These columns are bonded to the main wall by notching out every fourth block as illustrated in Figure 21, opposite, so as to make a reinforced concrete tie.

A temporary form is built at top and circle of arch. Molds are brought up around this, cut wedge-shape to form the arch. Clips are placed and concrete poured until an angle is reached where the concrete would run out of the holes by gravity. Arch is then finished by cutting out of the top of mold above openings to allow filling with concrete. A lintel is then formed across top of arch, extending into wall 16" on each side. Bucks or frames are anchored in arch in usual way.

For an 8" opening, wall is brought up to where circle begins, temporary form built to support molds and arch built in same manner, using half molds.

Illustration of a Stockade Arch Showing Detail

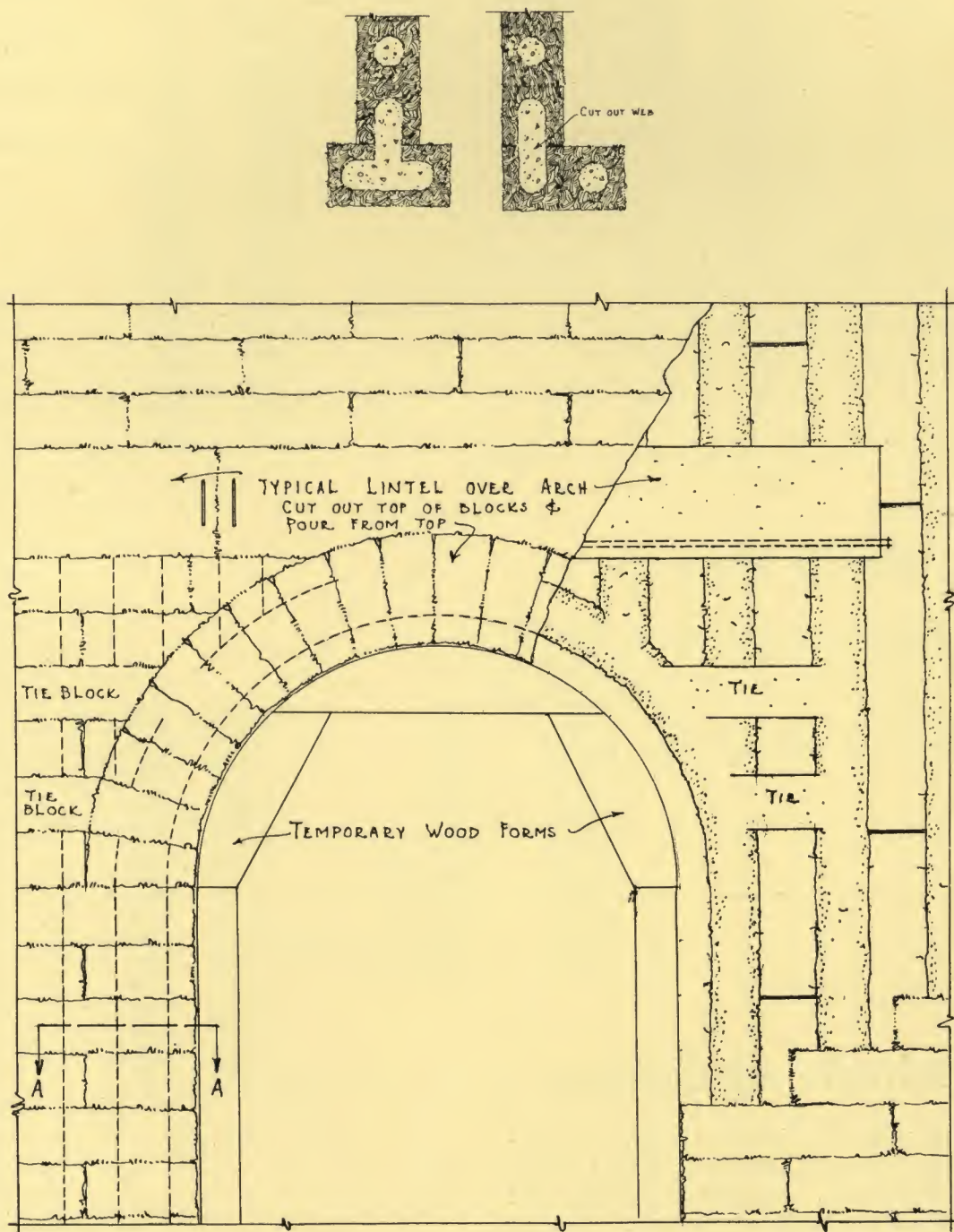
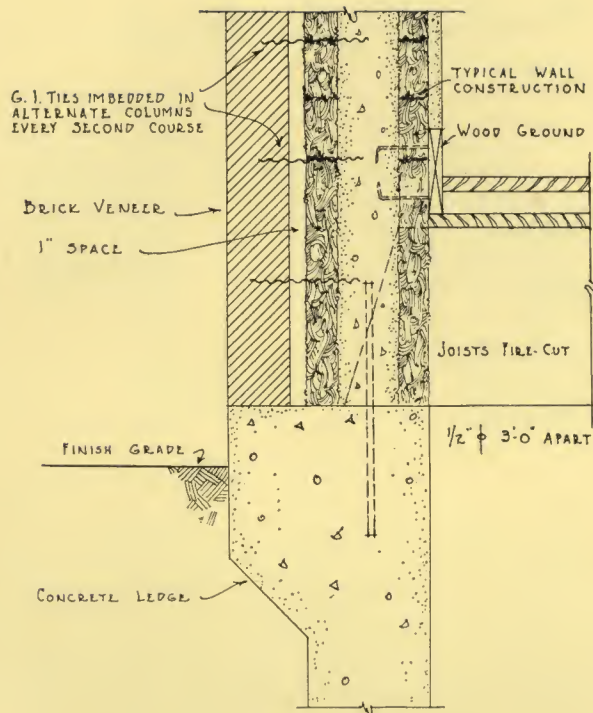
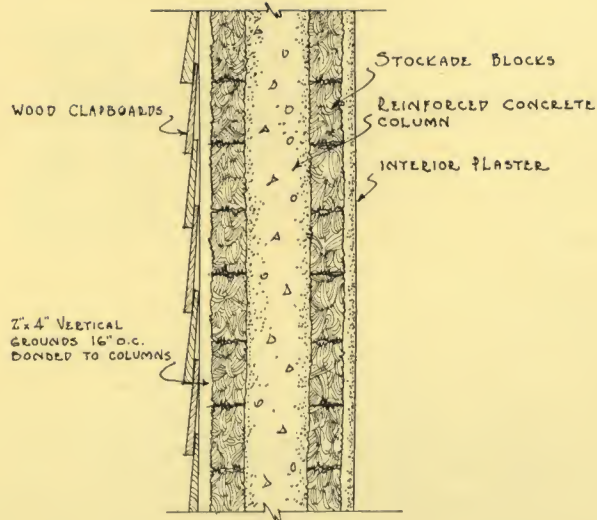


Fig. 21



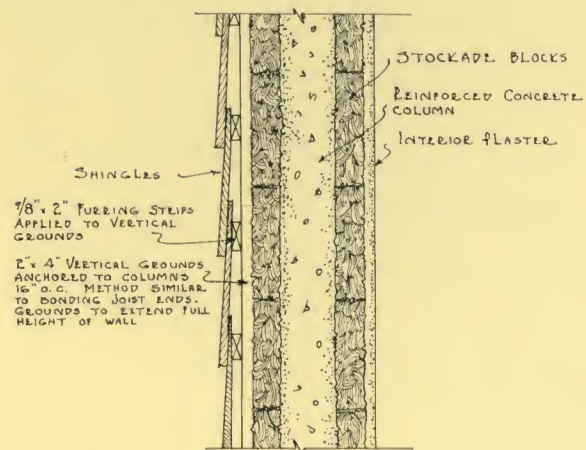
Brick Veneer

Galvanized brick ties are placed in the Stockade wall 24 inches apart every third course for brick veneer exteriors. Ties extend back far enough to be embedded in concrete columns. (Figure 22.) Foundation is 13" thick and 4" above grade.



Shingle or Siding

Figures 23 and 23A illustrate method of applying nailing grounds for shingle or siding exteriors on Stockade walls. Grounds are vertical and extend to height of wall on 16" centers. Additional horizontal strips are nailed to grounds for applying shingle. Foundation is 10" thick and 4" above grade.



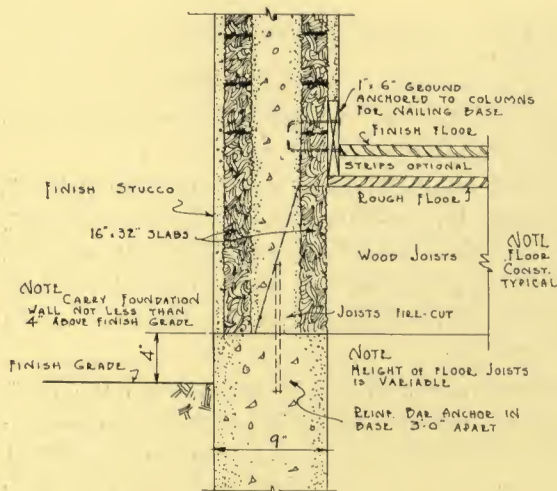


Fig. 24

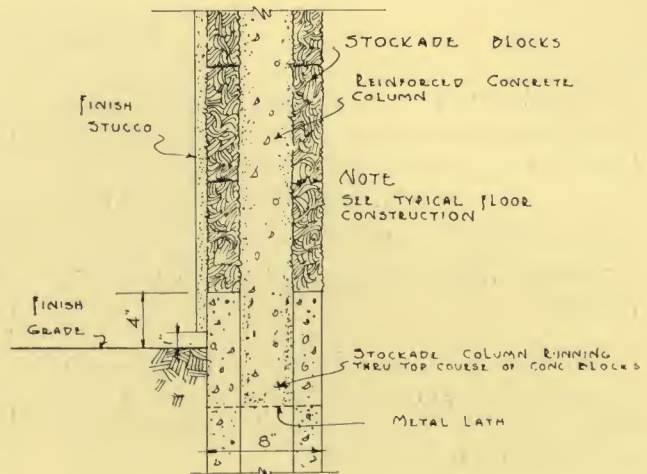


Fig. 24A

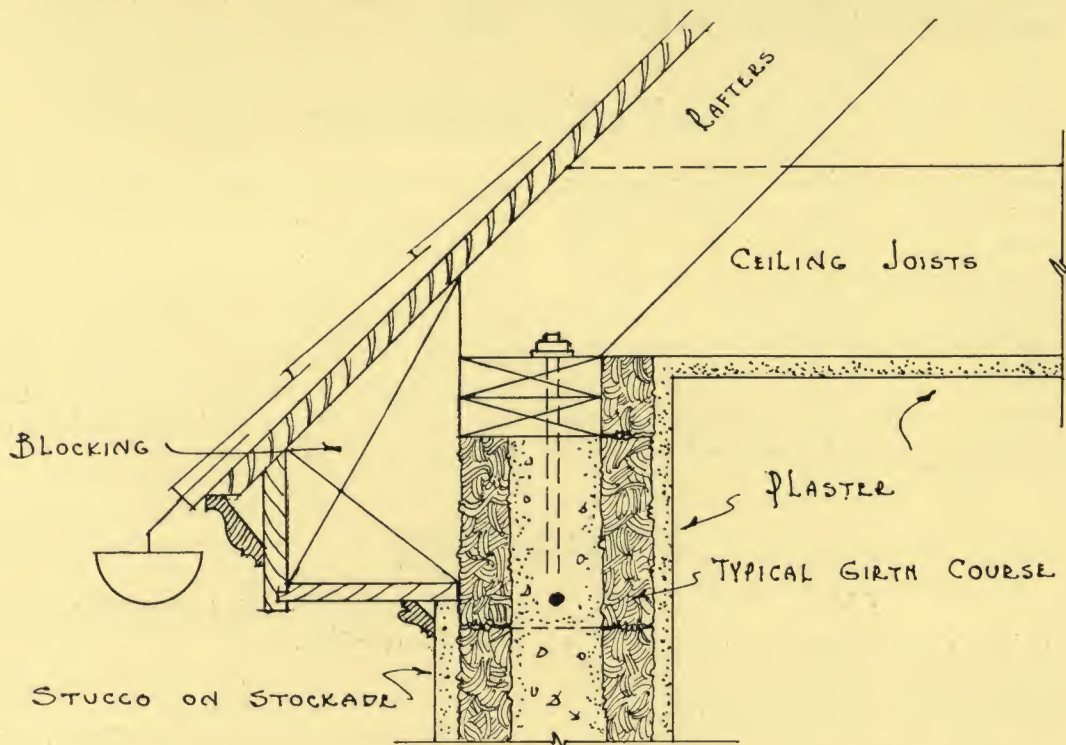


Fig. 25

Figures 24 and 24A are sectional views of typical Stockade walls on concrete block and solid concrete foundations.

Figure 25 is a sectional view of typical Stockade wall showing details of top girth and roof construction.

A cutaway illustration of a complete house showing method of Stockade construction throughout is shown on page 32.

Concrete

The strength of the Stockade will depend upon the reinforced concrete in the columns, girths and lintels. Consequently care should be taken in selecting the materials, proportioning the mixture and in placing the concrete.

Portland cement of any well known brand is reliable.

Sand or crushed stone known as fine aggregate should be clean, graded from fine to coarse, passing when dry a No. 4 screen and not more than 20% should pass a No. 50 screen.

Coarse aggregate should be clean and consist of pebbles or crushed stone retained on a No. 4 screen and no particles larger than one half inch.

What is known commercially as roofing gravel is generally an ideal material.

These materials are proportioned 1:2:4, that is one sack Portland cement, 2 cubic feet of sand, and 4 cubic feet of gravel. Sufficient water is added to give a plastic mixture and the whole turned over, preferably in a concrete mixer, for a full minute.

When this concrete is poured into the girth form or Stockade mold, it is puddled into place with a half inch rod. This operation should just bring a small amount of water to the top. The concrete should not be soupy. Too much water reduces strength—too little water makes placing difficult.

Cost of Stockade

Stockade costs less than any other permanent construction and less than any construction of any kind furnishing the same amount of insulation. In downright value nothing can compare with it. It has insulation, permanence, beauty, strength, all at a price far below any similarly permanent construction.

The Stockade mold sells generally for 15c delivered, although in the far west and southwest

there is a small amount of freight to be added. The 8" x 2" x 32" slabs cost 20c each and the 16" x 2" x 32" 40c each.

It takes less concrete to fill the holes in Stockade than it does mortar to lay an equivalent number of brick. And they lay much faster. Of course there is no mortar **between** the Stockade molds. This would conduct heat and moisture, thus reducing insulation value.

Estimating

(1)

Deduct the total number of square feet of all openings from the total number of square feet of wall surface. This gives the total number of square feet of Stockade required.

(2)

Multiply this figure by $2\frac{1}{4}$, which will give the total number of Stockade molds required if no slabs were used.

(3)

Find the total of the lineal vertical feet and lineal horizontal feet above openings, adding two lineal horizontal feet for each opening. Multiply this figure (total lineal feet of openings) by 12 inches and divide by 32 inches.* Multiply this

result by 2 and you will have correct number of slabs for openings.

(4)

Take the lineal feet around building, multiply by 12 inches and divide by 32 inches.* Multiply this result by 2 and you will have correct number of slabs required to form either an 8" or 16" girth around building.

(5)

Add number of 8" x 32" slabs for openings (3) and for 8" girths (4) and multiply by two.** Multiply number of 16" x 32" slabs for 16" girths by four.*** The total of these two results gives the equivalent number of molds to girths to be used.

Estimating

(Continued from preceding page)

(6)

Subtract the equivalent number of molds to girths (5) from the total number of molds required for entire wall areas (2). This gives the correct number of molds for the building.

(7)

The same number of reinforcing clips are required as molds and slabs. These are shipped with every consignment of Stockade and included in the cost.

(8)

The amount of concrete required to fill each thousand molds is 3 cubic yards of 1:2:4 mix; for each hundred 8" x 32" slabs, 1.10 cubic yards; for each hundred 16" x 32" slabs, 2.20 cubic yards.

(9)

Reinforcing for girths and openings up to 4 feet are regular $\frac{1}{2}$ " reinforcing rod. Openings over 4 feet have channel or T-iron, depending on the span. This is figured in lineal feet equivalent to lineal feet of girths and lintels, adding 16" for each overlap of rods at joints. This reinforcement is furnished by contractor or owner.

Example

	In			Out		
	Section of Wall	Dimensions	Area in sq. feet	Opening to deduct	Dimensions	Area in sq. feet
North Elevation	1	9x25	225	1	3x6	18
	1	9x6	54	2	3x7	42
	1†	$\frac{20 \times 10}{2}$	100	5	3x4	60
South Elevation	1	9x11	99	1	3x7	21
	1	9x15	135	2	4x6	48
	1	9x6	54
	1†	$\frac{20 \times 10}{2}$	100
East Elevation	1	9x25	225	2	4x6	48
West Elevation	1	9x25	$\frac{225}{1,217}$	2	4x6	$\frac{48}{285}$

(1)

1,217 sq. ft. minus 285 sq. ft. equals 932 sq. ft. This is total number of sq. ft. of Stockade required.

(2)

932 sq. ft. times $2\frac{1}{4}$ equals 2,097 Stockade molds. This is the number of molds required if no slabs were used.

(3)

Lineal vertical feet and horizontal feet above openings, adding 2 feet for each opening, amounts to 247 feet. 247 multiplied by 12 and divided by 32 equals 93 slabs multiplied by 2 equals 186 (8" x 32") slabs for openings.

(4)

Lineal horizontal feet around building is 107 feet. 107 multiplied by 12 and divided by 32 equals 40 slabs multiplied by 2 equals 80 slabs for girth.

(5)

186 (8" x 32") slabs for openings plus 80 (8" x 32") slabs for girth equals 266 (8" x 32") slabs multiplied by 2 equals the equivalent of 532 molds.

80 (16" x 32") slabs for 16" girth multiplied by 4 equals the equivalent of 320 molds.

Equivalent of 532 molds plus equivalent of 320 molds equals equivalent of 852 molds.

(6)

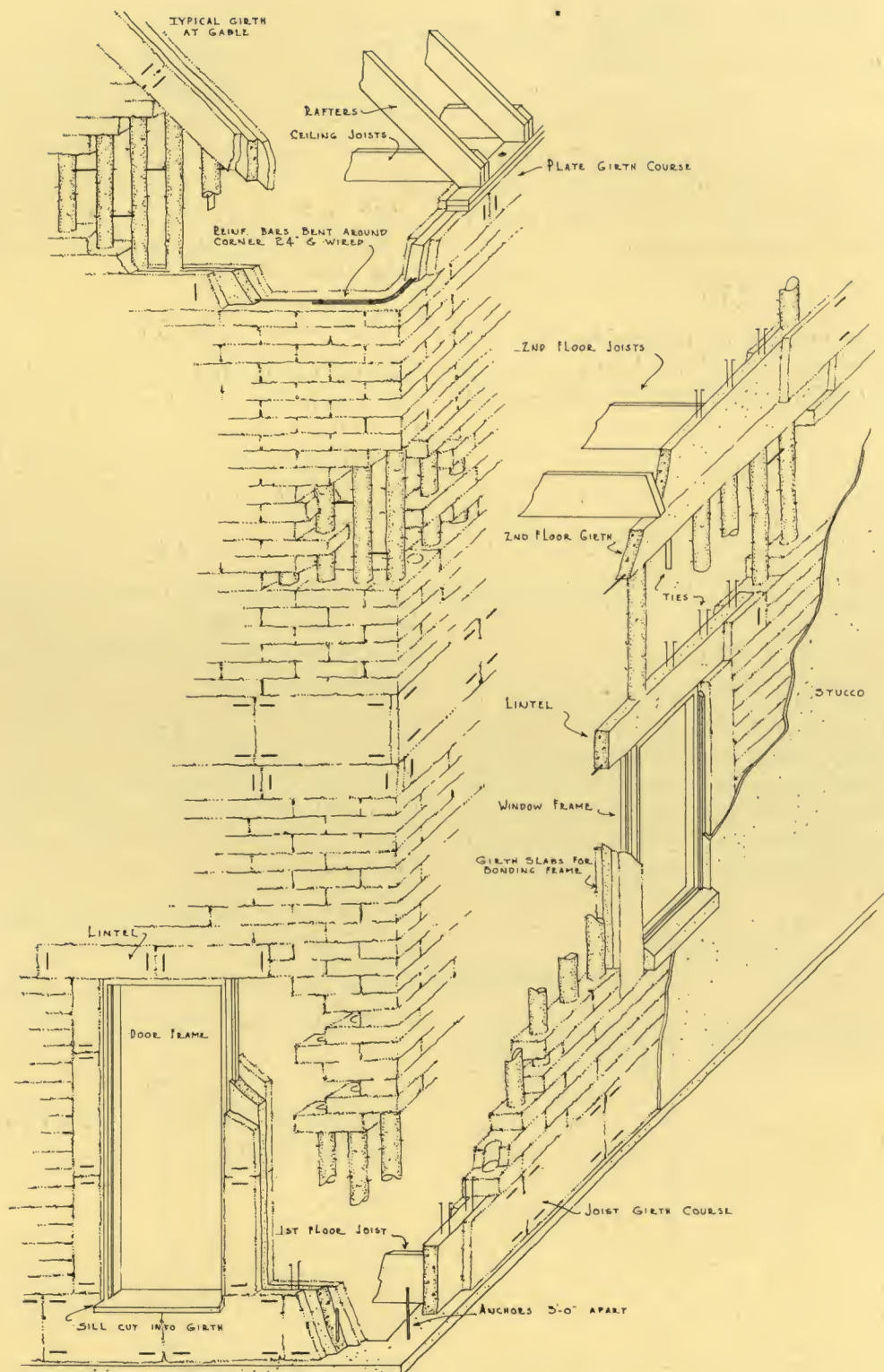
2,097 molds minus 852 molds equals 1,245 molds for building.

†Gable.

* Or multiply by 3 (instead of 12) and divide by 8 (instead of 32), giving same result.

** The wall surface of an 8" x 32" slab is equal to twice the wall surface of a mold.

*** The wall surface of a 16" x 32" slab is equal to 4 times the wall surface of a mold.



Perspective cut away drawing of a typical Stockade home showing the use of Stucco finish. Any other desired finish can just as easily be obtained with Stockade. Details are shown in preceding pages.

STOCKADE

A PROVEN MATERIAL

THE building system for residences outlined in the foregoing pages is not new or untried. During the past five years, under all climatic conditions, homes of practically every type have been built with Stockade.

People who live in Stockade homes are delighted with their comfort—cool in hot weather—easy and economical to heat in winter.

They have been surprised at their ease in construction—how quickly the inexperienced builder gets the “knack” of putting the Stockade molds in place quickly.

And every recommendation made in the foregoing pages has been based on actual experience and not on what someone thinks can be done. There need be no hesitancy about proceeding with a Stockade home based on the data in this booklet.

If any one requires help, however, in building with Stockade our engineers are at their disposal. Such services are however less and less in demand as contractors become familiar with its use.

Build Your Home with Stockade

You'll Never Regret It

THE STOCKADE CORPORATION

**228 NORTH LA SALLE STREET, CHICAGO, and
347 MADISON AVENUE, NEW YORK CITY**

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